

AR58

MANITOBA HYDRO-ELECTRIC BOARD  
52ND ANNUAL REPORT

# Building as One...



FOR THE YEAR ENDED  
MARCH 31, 2003

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"To be recognized as the best utility  
in North America..."



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# Vision

To be recognized as the best utility in North America with respect to safety, rates, reliability, customer satisfaction and environmental management and to be considerate of all people with whom we have contact.

# Mission

To provide for the continuance of a supply of energy adequate for the needs of the province, to promote economy and efficiency in the development, generation, transmission, distribution, supply, and end-of-use of energy, and to market energy services, within and outside the province.

# Goals

- Continuously improve safety in the work environment.
- Provide customers with exceptional value (rates, service, public safety, reliability and power quality).
- Be a leader in strengthening working relationships with Aboriginal peoples.
- Improve corporate financial strength.
- Maximize export power net revenues.
- Have highly skilled, effective, innovative employees and a diverse workforce that reflects the demographics of Manitoba.
- Be proactive in protecting the environment and be a recognized leader in doing so.
- Be an outstanding corporate citizen.
- Proactively support agencies responsible for business development in Manitoba.
- Be a leader in implementing cost-effective energy conservation and alternate energy programs.

# Corporate Profile

Manitoba Hydro is a provincial Crown Corporation providing electric energy to approximately 502 000 customers throughout Manitoba and natural gas service to approximately 251 000 customers in various communities throughout southern Manitoba.

We also export electricity to over 50 electric utilities and marketers in the mid-western U.S., Ontario and Saskatchewan. The Corporation has consistently been one of the top three exporting electric utilities in Canada\*, with exports accounting for approximately 30 per cent of kilowatt-hours sold.

We offer our customers a wide range of energy services, either directly or through our subsidiaries. Manitoba Hydro is also known worldwide for its expertise in high voltage direct current transmission.

Nearly all of our electricity is generated from self-renewing waterpower. On average, about 30 billion kilowatt-hours of electricity are generated annually, with 98 per cent produced from 14 hydroelectric generating stations on the Nelson, Winnipeg, Saskatchewan and Laurie rivers. About two per cent of the province's energy needs are produced from two thermal generating stations and four remote diesel generating stations.

We are also the major distributor of natural gas in the province. Natural gas is delivered throughout the southern portion of the province to nearly 100 communities using approximately 8 200 kilometres of pipelines. On average, we deliver about 2.3 billion cubic metres of natural gas through our system.

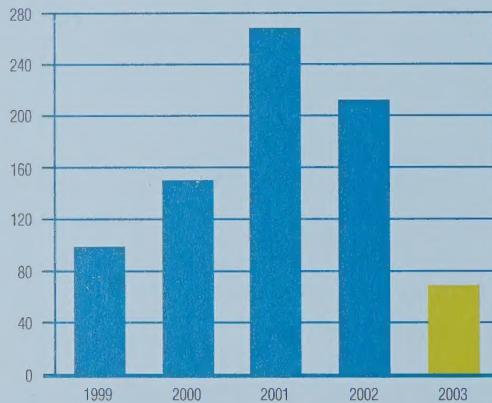
Our capital assets in service at original cost exceed \$10 billion, making us one of the largest energy utilities in Canada. Headquartered in Winnipeg, Manitoba Hydro has 76 offices throughout the province to serve its customers.

The governance of the Corporation is through The Manitoba Hydro-Electric Board, whose members are appointed by the Lieutenant Governor in Council.

\*Source: Canadian Electricity Association

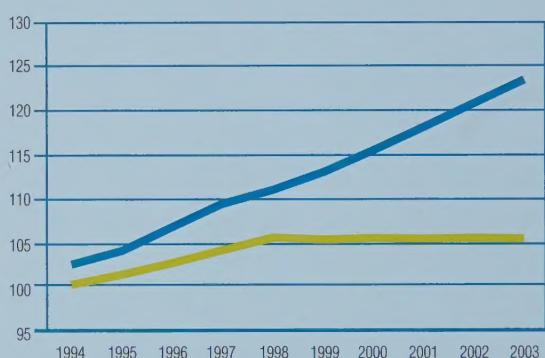
# Highlights

*Net Income*  
millions of dollars



*Annual Residential Rate Increases vs Consumer Price Index*  
(1993=100)

Manitoba Hydro  
Manitoba Consumer Price Index



## Consolidated Financial Results

in millions of dollars

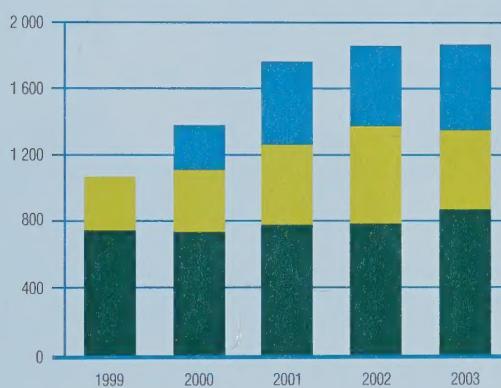
	2002-03	2001-02	change (%)
<b>Gross revenues</b>			
Electricity sales within Manitoba	<b>891</b>	797	12
Extraprovincial electricity sales	<b>463</b>	588	(21)
Natural gas sales	<b>515</b>	479	8
<b>Total</b>	<b>1 869</b>	1 864	—
<b>Expenses</b>			
Electrical	<b>1 277</b>	1 159	10
Gas (including cost of gas sold)	<b>502</b>	472	6
Corporate	<b>19</b>	19	—
<b>Total</b>	<b>1 798</b>	1 650	9
<b>Net income</b>	<b>71</b>	214	(67)
<b>Retained earnings</b>	<b>1 170</b>	1 302	(10)

# Highlights

## Total Revenue

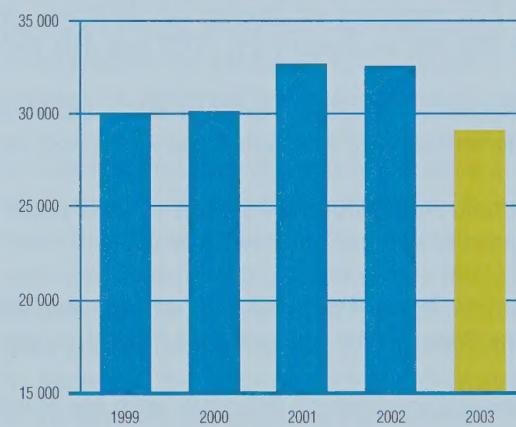
millions of dollars

- Gas Sales
- Exaprovincial Sales
- Electrical Sales



## Total Generation Interconnected System

000 000 kW.h



## Electrical Operations

in billions of kilowatt-hours

	2002-03	2001-02	change (%)
Generation – Interconnected system	29.2	32.6	(10)
Energy sales – Manitoba customers	22.0	20.4	7
Exaprovincial customers	9.7	12.3	(21)
Manitoba peak load in thousands of kilowatts	3 916	3 760	4

## Gas Operations

in millions of cubic metres

Gas Sales			
Residential	714	645	11
Commercial/Industrial	980	899	9
Sub-total	1 694	1 544	10
Transportation	640	502	27
Total	2 334	2 046	14

# Highlights

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*Manitoba Hydro purchased Winnipeg Hydro from the City of Winnipeg. The official transfer of ownership occurred on September 3, 2002.*

*A new historical peak demand for electricity of 3 916 MW on February 24, 2003 and for natural gas of 556 710 gigajoules on January 22, 2003 was established. These peaks break the previous records of 3 760 MW on January 29, 2002 and 504 730 gigajoules set in February 1996, respectively.*

*On December 16, 2002 Manitoba Hydro initiated a 15-month plan for PCN at Cross Lake for implementation of Northern Flood Agreement initiatives.*

*Manitoba Hydro launched a study of wind power generation. Seven sites in Manitoba are being monitored for wind speed and other weather data.*

*Manitoba homeowners and the heating, ventilation and air conditioning industry received assistance from a new Power Smart program that focuses on geothermal heat pump systems.*

*Aboriginal employment initiatives with the Manitoba Métis Federation and the Aboriginal Council of Winnipeg were announced to enhance employment opportunities at Manitoba Hydro.*

*Voluntary Challenge & Registry Inc. Leadership Award was presented to Manitoba Hydro in the electric utilities category during the annual Leadership Awards ceremony in Gatineau, Quebec.*

*The former coal-burning Selkirk Generating Station was successfully converted to natural gas.*

*A 260 MW natural gas combustion turbine plant was officially opened in Brandon.*

*The Home Comfort and Energy Savings Program continued to be an outstanding success with over \$29 million in loans issued to customers participating in the program.*

*For the sixth consecutive year, electricity rates have not increased to residential customers and rates to large industrial customers have remained unchanged since 1992.*

*A \$1.7 billion 10-year contract with Minneapolis-based Northern States Power, a subsidiary of Xcel Energy, for the export of 500 MW of electricity annually received National Energy Board approval in January 2003.*

*In November 2002, a new international interconnection was placed in service from Glenboro, Manitoba to Harvey, North Dakota.*

*Manitoba Hydro received corporate certification by British Standards Institute Management Systems as conforming to the international ISO 14001 standard for environmental management systems.*

# Chairman's Message



The Board of Manitoba Hydro has noted the progress made on many fronts during the year as the Corporation extended its service territory with the acquisition of Winnipeg Hydro, enhanced the province's energy production and distribution infrastructure, and continued its significant progress on aboriginal and environmental issues.

In addition, Manitoba Hydro is undertaking a major study of wind energy in Manitoba, is examining the opportunities for producing electricity from landfill gas and will be installing its own facilities for producing hydrogen on a small scale. In many respects, it is demonstrating its leadership in energy research and development in the province and providing the impetus for others to examine opportunities in the energy field.

The Board was pleased during the year that progress was made in meeting the expectations of the Pimicikamak Cree Nation at Cross Lake with regard to fulfillment of outstanding obligations under the Northern Flood Agreement (NFA). In December 2002, a 15-month action plan was agreed to that provides for a number of programs that deliver employment and environmental improvements while attempting to minimize expenditures on administration and process costs that don't directly achieve NFA commitments. Cross Lake is one of five NFA communities and the only one that does not have an implementation agreement that fulfills NFA responsibilities, based on its own stated preferences for implementing the agreement.

*Manitoba Hydro is demonstrating its leadership in energy research and development in the province.*

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Work continued during the year with other northern communities, the Nisichawayasihk Cree Nation at Nelson House and Tataskweyak Cree Nation, York Landing First Nation, War Lake First Nation and Fox Lake First Nation in the vicinity of Split Lake, on partnership arrangements for the development of future hydroelectric developments in Northern Manitoba. These unique development agreements allow for full participation and consultation on most phases of these potential developments and offer the prospect of long-term economic benefits for the local people and the region.

With the formation of the Aboriginal Relations Division within the Corporation in 2002-03, the many aspects of Manitoba Hydro's interaction with the aboriginal community in Manitoba have been centralized and strengthened. The Corporation has many programs underway to enhance aboriginal employment at the utility and is already achieving exceptional results from its efforts, as you can note from details contained in this report. The Board is very pleased with the achievements in this area.

Manitoba Hydro has maintained its leadership position in energy efficiency programs for its customers. New programs have been developed and old programs have been enhanced and Manitobans have responded. For example, under the Home Comfort and Energy Savings Program over \$29 million in loans have been issued to nearly 9 000 Manitoba Hydro customers for energy efficiency improvements.

The Board would like to recognize the efforts of all employees over the past year in serving Manitobans and maintaining an efficient and reliable system for delivering energy when and where needed in our province. It is through their efforts that Manitoba Hydro has achieved the status of one of the leading utilities in North America.



Victor H. Schroeder, QC  
Chairman  
The Manitoba Hydro-Electric Board

# President's Message



This was an historic year for Manitoba Hydro with the conclusion of the acquisition of Winnipeg Hydro, an entity that had served part of Winnipeg since 1911. Manitoba Hydro now provides Manitoba with a complete array of energy services. I sincerely welcome the former Winnipeg Hydro customers and employees.

The acquisition will allow Manitoba Hydro to operate more efficiently through the synergies inherent in having one organization responsible for serving gas and electricity to the same customers. Winnipeg Hydro customers now will have access to enhanced energy services, including the popular Power Smart\* programs.

The Purchase Agreement with the City of Winnipeg, calls for the development of a new head office building for Manitoba Hydro in downtown Winnipeg. The process is well underway to select the most appropriate site, following which a design concept will be developed, with input from employees, external groups and the general public.

During the year, Manitoba Hydro continued to strengthen and enhance the reliability of the provincial electricity system, as well as plan for the future energy requirements of Manitobans. The Selkirk Generating Station was converted from coal to natural gas operation, while two new natural gas combustion turbines were added to the Brandon Generating Station, resulting in a significant increase in the station capacity. Having this additional standby capacity at Brandon enhances the Corporation's ability to export electricity and also improves area reliability. The project to convert Manitoba Hydro's Selkirk Generating Station from coal to natural gas has been recognized with

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an award by the Canadian Council of Ministers of the Environment. An important new international transmission line was completed between Glenboro, Manitoba and Harvey, North Dakota, improving export and import capability as well as providing more reliability to the region.

Meanwhile, work continued on bringing new hydro-electric resources closer to reality. The Wuskwatim Generating Station, planned for an in-service date of 2009, will be located on the Burntwood River and is being jointly developed with the Nisichawayasihk Cree Nation of Nelson House. Near the end of the fiscal year, the Corporation applied for regulatory approval of the project with regulatory authorities. Following the receipt of environmental approvals, a decision will be made about proceeding with construction.

Studies are also proceeding regarding another northern hydroelectric facility, the Gull (Keeyask) Generating Station on the Nelson River, while discussions were underway with the Province of Ontario about the possible development of the Conawapa Generating Station, also on the Nelson River. This would require new high voltage transmission from Manitoba to southern Ontario. I was also very pleased with the employment initiatives targeted at Manitoba aboriginals and with the general state of the Corporation's interactions with the aboriginal community province-wide. With goodwill and sincere efforts on the part of all parties, we have made significant progress in many matters of mutual interest and I believe we have embarked on a new era of cooperation and progress.

Manitoba Hydro continues to enhance and expand its Power Smart programs, offering incentives and providing advice to customers on how to save energy. Our vision for Power Smart is to create a future where efficient use of energy is a part of everyday living for all Manitobans. The Corporation remains a leader among North American utilities in the delivery of energy efficiency programs.

The Corporation actively promotes the awareness of geothermal heat pumps as an alternative approach for home heating and cooling. The Residential Earth Power Loan program allows for significant financing assistance for homeowners purchasing a geothermal heating and cooling system.

While the Corporation has monitored emerging and alternative ways of generating electricity for many years, changing technology and economics allowed it to become more actively engaged in developing new sources of supply. During the year, the Corporation inaugurated a wind monitoring project at seven sites in the province. Sixty metre towers supporting meteorological equipment will collect wind speed data as well as other metrics for a year, with the goal of determining the most appropriate site for possible wind energy production. While the technical and economic analysis continues, renewable wind energy is a complement to the predominantly hydroelectric system that we have here in Manitoba. We are very interested in the results of this field work especially considering that the costs of wind generation facilities have decreased in recent years.

In the course of generating and supplying electricity and natural gas services, we are inevitably going to have an impact on the environment. How we prevent, minimize or manage those impacts has

*Success on the export market has allowed electricity rates in Manitoba to remain unchanged for six consecutive years for residential customers. For large industrial customers, rates have not changed since 1992.*

become increasingly important as our awareness of these interactions has grown. I have been very proud of Manitoba Hydro's performance in environmental issues in recent decades and we continue to work hard to ensure that these high standards are maintained. As part of this effort, Manitoba Hydro received corporate certification by the British Standards Institute for having an environmental management system that conforms to the international ISO 14001 standard. This certifies that the Corporation has in place a vigorous system of management controls for implementing, achieving and maintaining its environmental standards. Having such a management system in place has become mandatory for utilities belonging to the Canadian Electricity Association.

I am also pleased to report that in March 2003, Manitoba Hydro received the Leadership Award in the electric utilities category from the Voluntary Challenge and Registry Inc.. This award recognizes organizations for their commitment, action and leadership in meeting Canada's commitment to reduce greenhouse gas emissions.

After a number of years of negotiation and regulatory review, in January 2003, Manitoba Hydro received the approval of the National Energy Board for the sale of 500 megawatts of electricity to Northern States Power, a subsidiary of Xcel Energy. This 10-year arrangement, worth \$1.7 billion, has also received regulatory approval in Minnesota and will commence in 2005. This long-term contract will provide ongoing revenues to Manitoba and a clean renewable electricity supply to our Minnesota neighbours and we are extremely pleased that we were able to conclude this agreement.

The success on the export market has allowed electricity rates in Manitoba to remain unchanged for six consecutive years for residential customers. For large industrial customers, rates have not changed since 1992. These low rates are of direct benefit to all customers but also add significantly to the competitiveness of the industrial and manufacturing sectors.

Reduced water flows in Manitoba in 2002-03 resulted in lower hydroelectric production, which in turn resulted in a drop in net revenues to \$71 million compared to \$214 million in the previous fiscal year. We also expect the effects of these conditions to carry over into the next fiscal year but do not anticipate an impact on electricity rates—the extent of this reduction in net export revenue is not known at this time as we hope to experience significant rain this spring and summer.

I want to thank all employees in their efforts to integrate the two utilities and for their ongoing commitment to service and achieving our goals in a year with many challenges. Again I welcome the former Winnipeg Hydro employees to the Corporation.

I would like to express my appreciation to the Chairman of the Manitoba Hydro-Electric Board, Vic Schroeder, and his colleagues on the Board for their support and guidance during the year.



R.B. Brennan FCA  
President and Chief Executive Officer



*On September 3, 2002, Manitoba Hydro welcomed approximately 94 000 customers from the 90-year-old Winnipeg Hydro as the provincial utility took over the generation, distribution and operations of the former City of Winnipeg utility.*



◀ The three business sectors of customer service are represented from left, Greg Barnlund, Manager, Industrial Business Initiatives and Program Development; Neil Kostick, Major Accounts Advisor and Karen Brown, Manager, Customer Contact Centre.

# Customer Service

## EMERGING STRONGER TO SERVE ALL

On September 3, 2002, Manitoba Hydro welcomed approximately 94 000 customers from the 90-year-old Winnipeg Hydro as the provincial utility took over the generation, distribution and operations of the former City of Winnipeg utility. Our ownership of Winnipeg Hydro will increase efficiencies between the two utilities by streamlining electricity production and distribution to all Manitobans. We also embraced the addition of 545 former employees of the city utility to our workforce. They bring a proud tradition of commitment and dedication of providing service to the citizens of Winnipeg.

Negotiations for the purchase of Winnipeg Hydro began in early February 2002. In July 2002, the legislature enacted The Purchase of Winnipeg Hydro Act which approved the purchase agreement and dealt with related provisions. Key provisions of the purchase

agreement are a guaranteed revenue stream to the City of Winnipeg, annual Power Smart savings to the City, no layoffs, wage or benefits reductions for employees, and the commitment to building a new office complex in downtown Winnipeg.

With respect to the new downtown headquarters, an advocate architect has been hired to assist us in the process. Expressions of interest were issued to landowners and the development community in March 2003. Informational public meetings are scheduled for April 2003. A site selection is expected during the summer of 2003. The new headquarters is to be a state-of-the-art, energy efficient, cost-effective structure that embodies and demonstrates Manitoba Hydro's commitment to sustainable development.



Manitoba Hydro President & CEO Bob Brennan and the Minister responsible for Manitoba Hydro, Tim Sale hold a news conference to announce the search for expressions of interest from landowners and the development community for the Corporation's new head office building.

During the fiscal year, efficiencies as the result of the purchase have already been realized. In the former Winnipeg Hydro service area, one meter reader is now dispatched to read meters for both energy sources—gas and electricity. Dual meter reading has also made it possible to send both of the customer's bills in one envelope, significantly reducing processing and mailing costs. Any service or safety problems with gas or electricity meters are also addressed by the "one-stop" all-inclusive visit. The integration and cross-training of Manitoba Hydro's workforce from both its gas and electricity sectors now affords all its customers the convenience of addressing both their energy needs when contacting Manitoba Hydro.

## POWER SMART PROGRAMS PROVIDE VALUE

Manitoba Hydro is proud of its accomplishments with respect to its energy efficiency initiatives under Power Smart\* programs. We continue to be a leader among North American utilities in the delivery of such programs.

Creating a future where efficient use of energy is a part of everyday living for all Manitobans is Manitoba Hydro's Power Smart vision. Power Smart is an integral component of the Corporation's overall strategy, supporting efforts to provide customers with exceptional value, while meeting the energy needs of the province and being proactive in protecting the environment. Energy conservation is among the most cost-effective forms of energy and will continue to be looked at before considering all other sources.

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## Embarking on a New Era

*Winnipeg Mayor Don Harro, Manitoba Hydro President & CEO Bob Brennan and City of Winnipeg Chief Administrative Officer Gail Stephens sign the official transfer of ownership of Winnipeg Hydro to Manitoba Hydro.*

On September 3, 2002, ownership of Winnipeg Hydro, the City of Winnipeg's utility, was officially transferred to the provincial utility, Manitoba Hydro. It marked the beginning of a new era for generating, transmitting and distributing electricity throughout all parts of Manitoba.

Manitoba Hydro's purchase of Winnipeg Hydro allows for greater efficiencies in the delivery of energy services to Manitobans and provides the City of Winnipeg with ongoing revenues. In addition, Manitoba Hydro will be able to improve customer service through the coordination of programs, through one emergency system, and through streamlining the billing, metering and collection processes. The acquisition also allows Manitoba Hydro's Power Smart programs to be extended within the Winnipeg Hydro service territory, benefiting customers and achieving energy savings.

Two hydroelectric generating stations previously owned and operated by Winnipeg Hydro—historic Pointe du Bois and Slave Falls on the Winnipeg River—now join the 12 hydroelectric facilities operated by Manitoba Hydro, adding another 144 MW to our system capacity. The optimizing of generation, transmission and distribution activities will better position Manitoba Hydro to take advantage of competitive opportunities in the deregulated North American market.

Manitoba Hydro's agreement with the City of Winnipeg provided for payments of \$25 million per annum in years one to five, \$20 million in years six to nine, and \$16 million in year 10 and in perpetuity. The agreement also included a commitment to develop a new head office building

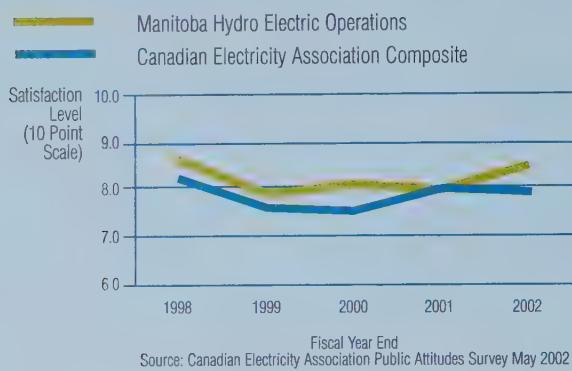
in downtown Winnipeg. The building will consolidate administrative functions and contribute to the vitality of the City of Winnipeg. It proudly joins several revitalization projects underway in Winnipeg such as True North Entertainment Centre, Red River College, the Millennium Library, and Waterfront Drive.

The new 400 000 square-foot downtown headquarters will be a world-class structure in energy efficiency and a global leader in sustainability and "green" building design. The goal is to create a building that has a minimum of 60 per cent energy consumption savings over today's norm and will be contemporary and distinctive in design. Approximately 2 000 employees are expected to occupy the structure by 2006. An announcement regarding the site location is expected during the summer of 2003. Manitoba Hydro's existing headquarters will remain to consolidate other corporate operations.

The acquisition of Winnipeg Hydro follows a long-standing pattern of consolidation in Manitoba, with a rich history of public and private electric and gas utilities amalgamating and converging. The addition of 94 000 customers from Winnipeg Hydro has Manitoba Hydro servicing approximately 502 000 electricity and 251 000 gas customers today. The 545 former Winnipeg Hydro employees join more than 5 000 employees at Manitoba Hydro.

A larger, healthier utility that can compete and survive in the changing energy marketplace of North America has definitely emerged.

*Customer Service Index*



*The Home Comfort and Energy Savings Program has also stimulated the home renovation industry.*

Since 1991, an estimated 241 MW of demand and 596 GW.h of energy have been saved through Power Smart efforts. This is equivalent to the combined electrical requirements of Steinbach, Dauphin, Carman, Neepawa and Morden. The demand savings includes approximately 121 MW obtained from our Curtailable Rates Program. To date, over \$100 million in energy savings have been realized. The initiative is expected to achieve cumulative total savings of 356 MW and 1 272 GW.h per year by the year 2011-12.

### **POWER SMART FOR HOME**

Manitoba Hydro has aggressively pursued the adoption of energy efficient codes and standards in the marketplace. We are a driving force on a number of provincial and national energy efficiency code and standards committees. We continue to be a key player on the Canadian Standards Association's Steering Committee on Performance, Energy Efficiency and Renewables. The group has been responsible for changes to national performance standards and legislation that has resulted in energy utilization improvement for a number of appliances. For example, the energy use for new refrigerators is now less than half the electrical consumption of refrigerators purchased in 1989. The impact of this is in the range of 700 kW.h per year for each new refrigerator purchased. With approximately 20 000 refrigerators purchased each year in Manitoba, this represents annual savings to Manitobans of over \$840 000. Over

time, this annual saving contributes to a substantial cumulative saving. Our continued involvement in standards development and legislation is expected to generate an additional load reduction of 119 MW in demand and 284 GW.h in energy by 2011.

Launched in 2001, the Home Comfort and Energy Savings Program continues to be an outstanding success. Over \$29 million in loans have been issued to nearly 9 000 of the 16 000 customers who have requested information and/or financing through the program. The program targets residential homeowners and provides information through home energy audits and financial support on Power Smart measures, such as high-efficiency furnaces, windows and insulation that will improve the homes' overall energy efficiency.

In addition to benefiting the homeowner, the program has benefited the retail sector by stimulating the home renovation industry through 650 participating retailers and contractors. In a recent survey of participating retailers and contractors, 27 per cent of the respondents rated the program 10 out of 10 with an overall satisfaction rating of 8.7.

Several additional Power Smart programs providing awareness of products and energy conservation methods continued to prove their popularity with consumers.

Over 1 500 people registered for 24 Manitoba Hydro Consumer Energy Saver/New Home



*Argyle homeowner Dean Scammell stands beside his geothermal heating system. Approximately 30 per cent of all units installed in Canada have been installed in Manitoba.*



*Heating costs for the Northern Model House in Thompson are estimated to be 35 per cent less per year than a conventionally built northern home.*

Workshops held in Thompson, The Pas, Lac du Bonnet, Selkirk, Dauphin, Beausejour, Stonewall, Brandon and Winnipeg. The responses exceeded organizers' expectations. Initially 20 workshops were planned, with attendance expected to reach 300 people. The workshops provided energy efficiency information to potential new and existing homeowners.

A program to assist seniors in identifying opportunities to reduce their energy bills was extended to Brandon, Steinbach and Dauphin in the summer of 2002. As part of this program, University students are employed to perform an energy consumption checkup. The program was piloted in 2001 in consultation with the Manitoba Society of Seniors for the City of Winnipeg with 297 checkups performed. In 2002, 506 checkups were conducted, with an estimated 212 158 kW.h in annual savings achieved.

Launched in 2002-03, the Geothermal Heat Pump for Homes program promotes awareness of geothermal heat pumps as an alternative to conventional heating and cooling systems. The program provides financing through the Residential Earth Power Loan to homeowners purchasing a geothermal heating and cooling system.

A key component of the program consists of building an industry support infrastructure by sponsoring training, education, and standards development for the geothermal heat pump industry. We facilitated the establishment of

a Manitoba chapter of the Earth Energy Society of Canada in March 2003. Installer accreditation courses adhering to the curriculum of the International Ground Source Heat Pump Association have taken place in Winnipeg. Sixty-one Manitobans have been IGSHPA-accredited through two courses sponsored by Manitoba Hydro. This represents 50 per cent of accredited installers in all of Canada. Manitoba also recorded the highest number per capita of geothermal installations in Canada, with approximately 30 per cent of all units installed in Canada being installed in Manitoba\*.

Manitoba Hydro also supported the construction and testing of the Thompson Display Home, a Northern Model House. The Model home features the use of Structural Insulated Panel technology, which is a panelized building system that provides for ease of construction, improved energy efficiency and mold resistance. We also ensured the home was constructed to Power Smart design standards. Heating costs are estimated to be 35 per cent less per year than a brand new conventional constructed Thompson home of the same size.

Similarly, we are supporting the testing and monitoring of the demonstration Churchill home. This project involves using Ambiente Panels, made from recycled glass. Currently an ambiente test building has been constructed at the University of Manitoba and is being monitored for energy savings.

\*Source: The Earth Energy Society of Canada



*Griffin Steel is one of several major industrial and commercial customers who benefit from our expertise in providing energy saving solutions.*



*St. Andrews River Heights Church in Winnipeg has taken advantage of an energy audit designed for religious organizations to make their buildings more efficient.*

## POWER SMART FOR BUSINESS

Manitoba Hydro is moving aggressively to target building owners and managers, as well as the design and architectural community, to incorporate energy efficient technologies into commercial new construction and major renovations projects through its Commercial Construction and Renovation Program. The purchase of Winnipeg Hydro has opened a new market to accelerate expected savings. Efforts are being focused on office tower heating, ventilation and air conditioning systems and parking lot control systems for block heaters. The goal is to reduce winter peak demand by 22.7 MW and energy consumption by 87.6 GW.h by 2011. As of March 2003, the program has achieved savings of 5.1 MW and 27.3 GW.h.

The Energy Manager Program is in year two of a pilot program. The program focuses on assisting the Pembina Trails School Division

(the amalgamation of the Assiniboine South School Division with Fort Garry School Division) in developing an energy efficient culture and incorporating lessons learned from the past year.

The Religious Building Initiative also continues in its second year to assist religious organizations find ways to make their buildings more efficient. An audit report is conducted, outlining how energy is being used in the building and what energy measures can be implemented to reduce energy consumption.

Manitoba Hydro introduced Power Smart Design Standards for new and renovated buildings in the summer of 2002. The standards were developed to assist owners and engineering/architectural firms to develop energy efficient commercial building designs with operating cost savings, lower energy bills, and improved facility comfort. In September 2002, the first building in Manitoba to be designated as Power Smart was the Gimli



▲ Service extension is provided to a new supermarket in Winnipeg.

▲ Mountain Equipment Co-op's new building in downtown Winnipeg incorporates many energy efficient features. Manitoba Hydro was part of the design team.

Community Health Centre, which uses 25 per cent less energy than a typical hospital. The facility's energy saving measures also includes items from lighting, electrical, building infrastructure framework and mechanical systems. The Sprague Primary Care Centre also achieved this designation in 2002-03. A number of other building projects pursuing this designation are underway at fiscal year end.

Our industrial and commercial customers continued to benefit from our expertise in identifying ways to use electricity more efficiently in their operations.

We played an integral role on the design team for a new sporting equipment retail facility in downtown Winnipeg. Mountain Equipment Co-op's building incorporates many environmentally friendly innovations such as an energy-efficient ventilation, lighting design, a waterless composting toilet system and a green roof. The building is estimated to be 67 per cent more energy efficient than a

standard retail facility of similar size. In 2002, the Manitoba Round Table honoured Mountain Equipment Co-op with an Award of Excellence for Sustainable Development.

Manitoba Hydro provided feasibility study assistance to enable Red River College to pursue the C-2000 Integrated Design Process during the planning stages of the new downtown campus. With the assistance of Power Smart technologies, the building design is 45 per cent more energy efficient than a comparable facility and implements innovative measures such as building integrated photovoltaics where solar panels are also the building cladding material. The campus was one of only three Canadian entries in the International Green Building Challenge held in Oslo, Norway in the fall of 2002.

*In addition to their focus on primary energy consumption, the Power Smart industrial facility assessments are being expanded to examine additional opportunities for customers to manage and reduce water consumption, wastewater discharge, greenhouse and other gas emissions, and solid waste production.*

In 2002, Manitoba's Spruce Products sawmill in Swan River was recognized with a 2002 Sustainable Development Award-Business Category for improving the recovery of lumber from logs, helping to build the economy through innovative technology and conserving energy. Manitoba Hydro identified significant annual electricity cost savings by switching nearly 100 electric motors used in the sawmill operations to high efficiency varieties. We also assisted with the development of a heat recovery system that allows Spruce Products to use heat from the wood waste thermal plant to create more comfortable working conditions and eliminating the need to use electricity for space heating.

In addition to their focus on primary energy consumption, the Power Smart industrial facility assessments are being expanded to examine additional opportunities for customers to manage and reduce water consumption, wastewater discharge, greenhouse and other gas emissions, and solid waste production. This is being promoted as an "eco-efficiency" focus to improve the environment while improving production and process efficiencies and saving energy. It is offered in collaboration with Manitoba and Canada.

We continued to provide performance optimization solutions to several industries covering motive-driven equipment such as fans, pumps, and air compressors, measures for speed control, and system elements such as pipes, ducts, and flow controls. During 2002-03, Pollard Banknote, Loewen Windows and the Lucerne Foods Milk Plant saw significant operating efficiencies as a result of this program.

Energy efficient lighting technologies in new construction and renovation projects were brought right to our doorstep last year, when a number of lighting projects were conducted in our own facilities. Energy savings were realized at lighting upgrades at our Grand Rapids Generating Station control room and at several locations in our Taylor Avenue headquarters.

The Health Sciences Centre Central Energy Plant in Winnipeg implemented an energy management system to track energy consumption and to control natural gas and electricity usage. The facility has also participated in our lighting program to retrofit approximately 9 000 lights for an energy saving of 525 kW and 2.4 million kWh annually.



*Crews work to restore power in the West Hawk Lake area in the Whiteshell Provincial Park following a severe summer storm.*

## **NEW TECHNOLOGY IMPLEMENTED FOR OUTAGES**

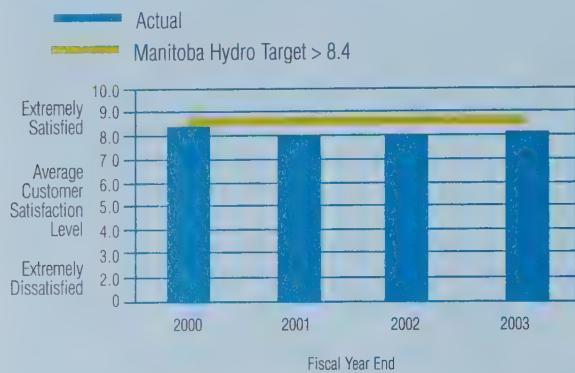
Customers in Winnipeg and southern Manitoba experienced power outages lasting up to several days in some areas as a result of a severe summer thunderstorm coupled with high winds in June 2002. The storm dropped up to 250 mm of precipitation in some areas, downing hydro poles and snapping trees onto conductors. Crews were dispatched from all areas of the province to restore power in the storm-affected areas.

Manitoba Hydro embarked on a major undertaking with two new technologies that will streamline the way the Corporation processes and responds to customer outage calls. The new systems implemented in the spring of 2003 are the Trouble Call Response database and Interactive Voice Response system. Customers contacting the utility's emergency number with an outage will have

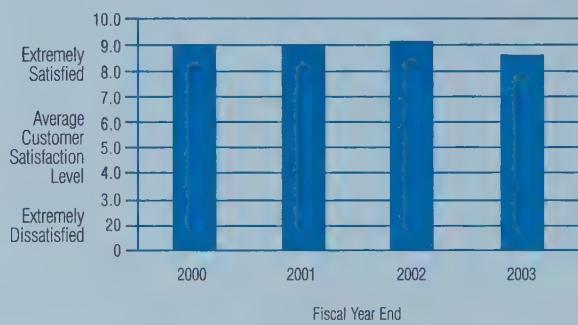
their information and address automatically recorded by virtue of their phone number. The availability of real-time outage information is designed to reduce the amount of time for service restoration and improve how we respond to customers requiring information concerning the status of their outage situation.

Manitoba Hydro's Customer Contact Centre provides customers with a high level of customer service, answering a wide-ranging number of inquiries related to electricity and natural gas services. The centre receives an average range of 42 800 to 72 800 calls per month and in many cases represents the customer's primary contact with Manitoba Hydro. Nearly 78 per cent of the incoming calls are resolved on the first call. In a recent survey, 77 per cent of customers are very satisfied with the services and handling they received through the centre.

*Satisfaction with Overall Customer Service*



*Satisfaction with System Reliability*



## WE HAVE THE POWER WITHIN US CAMPAIGN

In the fall of 2002, we unveiled a new marketing campaign strategy with a shift in messaging from the Corporation to the consumer. The message conveyed the understanding that Manitoba Hydro belongs to Manitobans, and the power is within each and every one of us. One of the campaign's highlights was the re-painting of the Portage Avenue St. James Street substation and television commercials with Manitobans reciting the anthem, "We have the Power within Us".

## COMMON TRENCHING ADDS TO SAFETY, CUTS COSTS

In the fall of 2002, Manitoba Hydro crews installed natural gas pipelines in the same trench with electrical, MTS and Shaw Cable communications to serve a new subdivision in Winnipeg. This represented a departure from the usual practice of installing gas lines in a separate trench, and sets a precedent that is safe, efficient, and cost effective. Although not a new concept in North America, it was new to the three Manitoba utilities. Initially launched as a pilot project two years ago to examine the issues surrounding the integration of gas into a common trench with electric and communication cables, Manitoba Hydro took the lead to develop standards for the process.

The process also has a safety advantage in that the separation between the pipes and cables are now known before the trench is filled as opposed to when trenches were dug separately at different times, leading to assumptions that services were well clear of one another.

## RATES & REGULATORY AFFAIRS

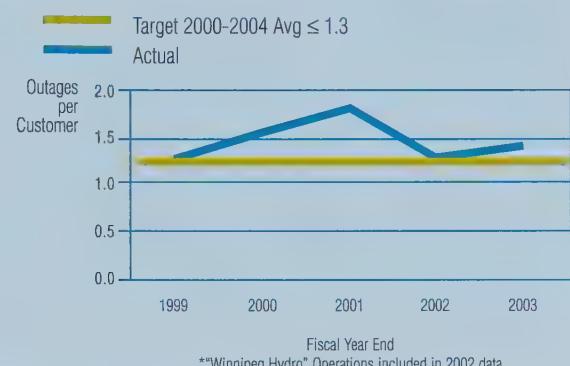
Manitoba Hydro's electricity customers continue to enjoy a long period of rate stability. Rates have not increased to residential customers since 1997 and rates to large industrial customers have remained unchanged since 1992. We maintain our enviable position of having the lowest overall electricity rates in Canada and among the lowest in the world.

Over the fiscal year 2002-03, natural gas prices were adjusted depending on the forecasted market cost of Primary Gas supplies. Four changes to natural gas prices were passed on to Manitoba Hydro customers in May 2002 (13.1 per cent increase), August 2002 (4.0 per cent decrease), in November 2002 (2.1 per cent increase) and in February 2003 (9.1 per cent increase). Our Primary Gas rate is updated on a quarterly basis according to the projected cost of Primary Gas supplies for the next 12 months as forecasted in financial markets.

#### Average Customer Outage Duration



#### Average Customer Outage Frequency



In December 2002, a 2003-04 General Rate Application (GRA) was submitted to the Public Utilities Board of Manitoba. The last GRA was in 1998 and the current application represents the first for Manitoba Hydro since it acquired Centra Gas Inc. in 1999. Approval is being sought for new Distribution (to customer), Supplemental Gas, and Transportation (to Centra) rates to be effective April 1, 2003, and implemented August 1, 2003. The non-gas rate changes are expected to result in a typical residential customer's annual bill increasing by 1.4 per cent.

#### **\$1.7 BILLION SALE AGREEMENT SIGNED WITH EXPORT CUSTOMER**

A 10-year contract between Manitoba Hydro and Minneapolis-based Northern States Power, a subsidiary of Xcel Energy, for export of 500 MW of electricity annually from Manitoba to Minnesota starting in 2005, received final approval from Canada's National Energy Board in January 2003. The approval follows a similar decision in December by the Minnesota Public Utilities Commission.

Electricity exports have made up a growing portion of Manitoba Hydro revenues in the last decade. Revenues from our export customers continue to help keep rates charged to Manitobans substantially lower than would otherwise be the case. In 2002-03, export sales amounted to \$463 million in spite of experiencing low flow conditions. During the decades since Manitoba Hydro has been exporting electricity it is estimated that such exports have reduced the production of greenhouse gases by 139 million tonnes by reducing the need for coal or natural gas generation in the region. Furthermore, the exports have had a positive impact on regional air quality by reducing other emissions from thermal generation. About 10 per cent of the electricity used in Minnesota comes from Manitoba imports. The new agreement with Northern States Power ensures that this environmental benefit will continue over the contract period.



*Manitoba Hydro achieved substantial benefits from its first full year of coordinated system operations and open access transmission services under Midwest Independent System Operator.*



◀ Randall Kubaz oversees a capacitor addition in the 500 kV switchyard at the Dorsey Converter Station.

# Transmission & Distribution

## EXPANDING OPPORTUNITIES IN U.S. MARKETS

Manitoba Hydro achieved substantial benefits from its first full year of coordinated system operations and open access transmission services under Midwest Independent System Operator (MISO). In February 2002, MISO, with headquarters in Indianapolis, Indiana, assumed control of the Mid-Continent Area Power Pool Security Center and Transmission Service and Tariff Administration in St. Paul, Minnesota. The arrangement under MISO provides Manitoba Hydro additional export opportunities into service territories as far away as Kentucky.

With the significant imports necessary due to low flow conditions experienced in the 2002-03 year, the Corporation's arrangements with MISO provided a consequential financial advantage to Manitoba Hydro, as Manitoba Hydro would have otherwise had to

pay transmission service fees to import from MISO members. MISO is the first Regional Transmission Operator (RTO) in North America and consists of 23 transmission-owning members in 15 U.S. states and Manitoba. Manitoba Hydro is the only Canadian utility participating in an international RTO.

In response to perceived problems in the marketplace, the U.S. Federal Energy Regulatory Commission issued a proposed new set of rules to govern the wholesale electricity market in the U.S.. Manitoba Hydro has been working with MISO on the new proposals and to put in place the changes that will be necessary to the current coordination agreement by the summer of 2003.



System Operator Brian Buelow at the Winnipeg Central District Control Centre monitors the system within the City of Winnipeg.

### **RELIABILITY STRENGTHENED**

The purchase of Winnipeg Hydro created the opportunity to integrate the system control functions of the two utilities. The responsibility for the Pointe du Bois and Slave Falls generating stations has been transferred to the Manitoba Hydro System Control Centre. The transfer of the operation of Winnipeg Hydro's transmission and subtransmission facilities will be completed within the next two years as new supervisory remote controls are implemented in at least half of the former Winnipeg Hydro substations.

The System Control Centre EMS/SCADA system, which became operational in 1998, underwent a major upgrade during the current fiscal year. The upgrade consisted of updating the system software to take advantage of new advancements in technology and applications to further the Corporation's goals on many levels—safety, reliability of service and maximizing transmission capacity. The flexibility of the upgraded system will allow

the Corporation to more easily react to and comply with changing conditions in the industry.

### **FIBRE OPTICS**

Work continues on the installation of fibre optic cable and associated electronic systems through the Interlake to the Nelson River stations. This system will replace two existing microwave radio communications systems that can no longer meet power system reliability requirements or the demands of modern electronic office systems.

Manitoba Hydro permits carriers, internet service providers and community aggregators access to broadband capacity at commercially competitive rates. Delivery of broadband services has already begun to a few community-based providers in southern Manitoba. Access to high speed data services can have a positive impact upon communities by enabling medical, educational and socio-economic opportunities enjoyed in more populated centres.

## GLENBORO-HARVEY 230 KV LINE COMMISSIONED

In November 2002, a new international interconnection was placed in service from Glenboro, Manitoba to Harvey, North Dakota. The 255-km, 230 kV line allows for an increase in import capability by 38 per cent as well as improving the reliability of supply in North Dakota and in western Manitoba. During the low water conditions experienced this winter, it allowed us to import energy more economically. Complementary upgrades of 200 MW are scheduled for April 2003 that will further increase our export capability to the U.S.

## TRANSMISSION OPPORTUNITIES EXAMINED

Manitoba Hydro and Hydro One conducted a preliminary feasibility study to identify high capacity transmission alternatives to increase the transfer capability from Manitoba to Ontario by about 1 300 MW. Several alternatives were identified. The transmission would be sufficient to deliver all the energy from the proposed Conawapa Generating Station to service Ontario markets.

Preliminary planning has also proceeded for a new high voltage direct current transmission line called Bipole III along the east side of Lake Winnipeg to ensure Manitoba's electrical delivery system reliability and security. The third high voltage direct current line would provide backup to existing Bipole I and Bipole II transmission lines, which currently carry 70 per cent of the power produced in Manitoba and are both situated side by side on the same right of way on the west side of Lake Winnipeg. It will also be required should plans for the construction of the Gull Generating Station proceed. That project currently has an in-service date of 2012.

## HUGHES LAKE PROJECT

Under extreme winter weather conditions, a project to build 32 km of 24 kV distribution line from Lynn Lake to the community of Hughes Lake (Marcel Colomb First Nation) was successfully completed over a two-month construction period. The project also involved the Marcel Colomb First Nation community members and businesses in brush clearing, the supply of heavy equipment and various construction activities. In addition to the extreme temperatures and high wind chills, the crews battled abnormal ground frost conditions and rocky terrain during the installation of poles, conductors and anchors.

## SPACER DAMPER PROJECT COMPLETE

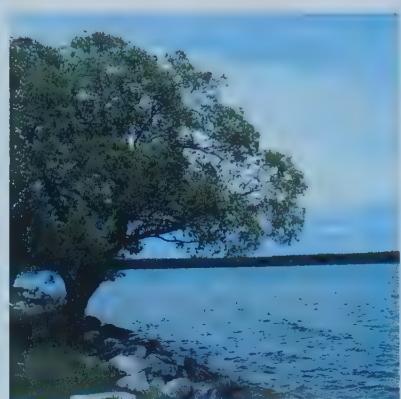
A two-year project to replace approximately 47 500 spacer dampers on Manitoba Hydro's two HVDC lines was completed ahead of schedule in September 2002. Spacer dampers separate the HVDC lines, preventing them from clashing together while also reducing vibration. The lines extend over 900 kilometres from converter stations near Winnipeg and Gillam. An additional 9 000 new spacer dampers were added between the Henday-Radisson-Dorsey converter stations on the 500 kV Bipole HVDC transmission lines.

## MAINTENANCE, REMEDIATION WORK CONTINUES

Various station site improvement projects involving the replacement of electrical components to upgrades of transformer units took place at the following stations in 2002-03: Brereton, Boissevain, Vivian, Dorsey, Dauphin, Glenboro, Jenpeg, St. Vital, Seven Sisters, Grand Beach, East Selkirk, Ross Lake, Brandon-Victoria, Flin Flon, Great Falls, Grand Rapids, Ponton, Roblin South, St. Boniface, Sarto, Whiteshell, and Winkler.



*Manitoba Hydro has been able to effectively and efficiently maximize its available water resources in the province's various watersheds.*



▲ Duane Kabaluk and his co-workers remove built-up ice from the spillway gates at the Slave Falls Generating Station on the Winnipeg River. The ice is chainsawed into blocks for ease of removal.

# Power Supply

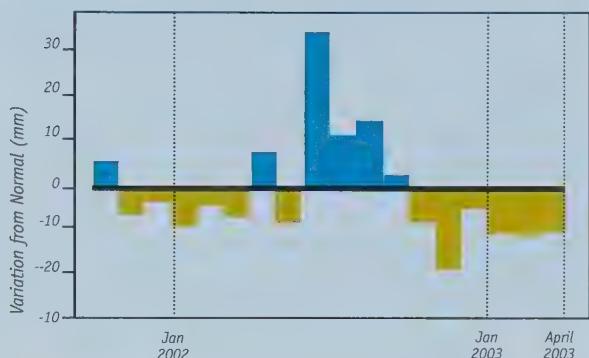
## MANAGING OUR WATER RESOURCES

Manitoba Hydro closely monitors the water flows on key rivers and lakes that affect Manitoba's production of electricity. As of fiscal year end, precipitation in Manitoba's major drainage basin, the Nelson-Churchill, has been at below normal levels in 12 of the last 18 months. Clearly we have been experiencing a period of low water flows.

While these conditions generally signal a reduction in export revenues and an increase in imports, as experienced in 2002-03, Manitoba Hydro has been able to effectively and efficiently maximize its available water resources in the province's various watersheds. This prudent management is reflected in the achievement of this fiscal year's consolidated net income of \$71 million and extraprovincial sales of \$463 million.

Through carefully managing levels in reservoirs, increased use of thermal resources, and importing power overnight to replace or supplement

Nelson-Churchill Drainage Basin Precipitation 2002-03



production, Manitoba Hydro ensures that the electricity supply to its customers continues to be maintained in the most responsible and efficient way under some very challenging conditions.

## BRANDON GAS-FUELLED GENERATION IN SERVICE

The two units of the natural gas combustion turbine plant at the Brandon Generating Station came into service in June and July 2002, respectively. Built over two years at a cost of \$191 million, the new plant will help Manitoba Hydro maximize export revenues while strengthening the security of the electricity system in southern Manitoba. The combustion turbine units add approximately 254 megawatts to our system. Combined with the existing coal-burning unit at the Brandon Generating Station, the additional capacity improves the station's overall rating to approximately 346 MW, making it the fifth largest station in the province.



*One of the two new natural gas burners at the Selkirk Generating Station is ignited at the official ceremony marking the completion of the station's conversion from coal-burning to natural gas.*

## **SELKIRK THERMAL PLANT CONVERTED**

The former coal-burning Selkirk Generating Station was successfully converted to natural gas in June 2002. Manitoba Hydro is one of the first utilities in Canada to convert a station from coal to clean-burning natural gas.

Announced in January 2001, the \$30 million conversion has enabled Selkirk to meet emerging and anticipated environmental regulatory requirements. The switch from coal to natural gas has virtually eliminated emissions of mercury and other metals, sulphur dioxide and particulate matter, and will significantly reduce emissions of carbon dioxide and nitrogen oxides. The fuel-switching project involved equipping the station's two boilers with a total of 16 high-efficiency natural gas burners and the installation of a large capacity natural gas line from Landmark, Manitoba to East Selkirk to supply the station. Manitoba Hydro is proceeding with the decommissioning of the redundant coal facilities at the plant.

## **INNOVATIVE PARTNERSHIP MODELS CREATED**

Environmental monitoring studies continue for the Gull Generating Station on the Nelson River. The earliest possible in-service date for the Gull project is 2012.

Manitoba Hydro has been in informal discussions about potential development at Gull since the mid-1990s with the Tataskweyak Cree Nation and subsequently the War Lake, Fox Lake and York Factory First Nations have participated

in the discussions. The historic Tataskweyak Cree Nation Agreement-in-Principle signing in October 2000, set the stage for new levels of cooperation and potential partnerships with several First Nations on the potential of developing one or more generating station projects to take advantage of strong, profitable export markets in the United States and in Canada.

Nisichawayasihk Cree Nation signed an Agreement-in-Principle in September 2001 on the Notigi and Wuskwatin projects, allowing the First Nation to obtain an equity position of up to 33 per cent by investing in the proposed generating stations.

## **UPGRADES TO GENERATING STATIONS**

Various upgrades to our generating facilities and surrounding infrastructure were undertaken during 2002-03.

The Winnipeg River Bank protection program continued with bank repair and stabilization work being completed at four sites. In particular, repairs were necessary to dykes on the Winnipeg River system following a significant windstorm in June 2002. At the Seven Sisters Generating Station, the Dam Breach Early Warning System was successfully installed. In the unlikely event of a dam breach, sirens will warn the local public. Surfacing repairs and improvements also continued on the station's forebay dykes to protect their serviceability and integrity. Structural repairs to the dam at the Pointe du



Photo credit: Stewart Cochane

*Two powerhouse cranes lift Kettle Generating Station's Unit 6 generator rotor to facilitate major maintenance work on the unit.*

Bois Generating Station were continuing to increase that station's structural integrity and stability.

At the Kettle Generating Station, Unit 6 underwent major maintenance work using innovative techniques and planning that translated into major time savings and lower revenue outage costs. The two powerhouse cranes at the station were upgraded to enable the lifting of the unit's generator rotor and the field poles encircling the rotor at the same time. Until this time, the field poles would have had to be separately removed, a time-consuming process. The crane upgrade project involved a team of mechanics, engineers, planners, site supervisors and field workers. It is now expected to save more than \$1.5 million over the remaining life of the station.

### **SHAMATTAWA DIESEL STATION ADDITION UNDERWAY**

A new diesel generating station addition is underway in Shamattawa. The two-year project

between Manitoba Hydro and the joint venture contractor, Shamattawa First Nation and A1 Renovating Ltd., saw the majority of work completed by the end of the first season. The new plant is expected to be in service by September 2003 and will be able to meet the future electrical demand of the community for the next 10 years.

### **SOIL REMEDIATION UNDERTAKEN**

Cleanup of the decommissioned diesel generating station sites in several north central Manitoba communities continued. The communities were connected to the electrical power grid in 1998. In 2002-03, site cleanup was completed in Red Sucker Lake while soil remediation continues in Oxford House and St. Theresa Point.

Soil remediation projects were also undertaken at Pikwitonei, Thicket Portage, Arborg, Beausejour, Kenton, Niverville, Brochet and God's Lake Narrows.



## The Road to Next Generation

Potential new hydroelectric facilities on the Burntwood and Nelson river systems continue to be evaluated by Manitoba Hydro and its aboriginal community partners. The Aboriginal communities of Tataskweyak Cree Nation and War Lake, Fox Lake and York Factory First Nations have set in motion the potential opportunity to partner with Manitoba Hydro on the proposed Gull Generating Station on the Nelson River while the Nisichawayasihk Cree Nation are partnering with us on the proposed Wuskwatim Generating Station on the Burntwood River.

Environmental Impact Statements (EISs) were being prepared for submission to the provincial and federal governments for environmental licensing on the 200 MW Wuskwatim Generating Station and its associated transmission lines. It is a culmination of studies which began in 2000 that focused on water quality, fish and fish habitat, plants, forestry, birds, mammals, resource use, people and the local economy. Upon further discussions on the EISs with the communities and receipt of all approvals, a decision will be made regarding proceeding with project construction. Manitoba Hydro and the Nisichawayasihk Cree Nation have jointly undertaken all the necessary engineering, environmental, consultation and other related activities in preparation for this decision.

Public consultation is a key component of the planning process for the Wuskwatim project.

Three rounds of public consultation have also been held on the Wuskwatim project. The first round, held in the fall of 2001, introduced the Wuskwatim project to elected leaders from communities in the region. Round two, held between November 2001 and May 2002, introduced a broader audience to the discussion and examined alternative ways of undertaking the Wuskwatim development, including alternative routes for related transmission lines. Round three, held between November 2002 and January 2003, presented the specific impacts of the Wuskwatim project and ways to manage those impacts.

A decision regarding construction of Wuskwatim Generating Station will be made after receipt of all environmental approvals. The earliest that the project could bring new electricity to market would be in late 2009.

Meanwhile, environmental monitoring studies are being conducted for the 620 MW Gull Generating Station on the Nelson River. The earliest possible in-service date for the Gull project is expected to be 2012. The Cree name for Gull is Keeyask, and if the project proceeds the station will likely carry that name. The 100 MW Notigi Generating Station on the Burntwood River and the 1 250 MW Conawapa dam also on the Nelson River, are currently not expected to come into service until much later in the Corporation's power development plans.

The development of one or more of these sites would further enhance Manitoba Hydro's ability to take advantage of the lucrative export market for electricity in the United States and adjacent provinces. Manitoba Hydro maintains an enviable position of not requiring development for local consumption. Maximizing revenues from export sales is a key component to maintaining the low electricity rates enjoyed by Manitoba Hydro customers.

Other benefits from the development of these projects are the development of skills for northern peoples as a result of training opportunities, employment and increased business opportunities. In cooperation with the federal and provincial governments, we are helping to fund a multi-year pre-project training initiative being undertaken by the First Nation partners in the Wuskwatim and Gull projects. The initiative is designed to ensure that the First Nation members and other northern aborigines will be in a position to take full advantage of the skilled trades and other jobs that will be available during the construction phase. In addition, the projects could make substantial contributions to reducing greenhouse gas emissions.



*Canada's Climate Change Voluntary Challenge and Registry has also recognized Manitoba Hydro as a Gold Champion Level Reporter for its 2002 Climate Change Action Plan update. This is Manitoba Hydro's fourth consecutive Gold Status award.*



◆ Water samples are taken along the Winnipeg River near Pinawa to determine how shoreline protection measures affect fish habitat.

# Environment

## CLIMATE CHANGE INITIATIVES

Manitoba Hydro was presented with a Voluntary Challenge & Registry Inc. (VCR Inc.) Leadership Award in the electric utilities category during the annual Leadership Awards ceremony in Gatineau, Quebec. VCR Inc. presents its annual Leadership Awards to recognize organizations for their commitment, action and leadership within their economic sector in meeting Canada's commitment to reduce greenhouse gas (GHG) emissions. VCR Inc. is a non-profit partnership of over 900 industry and governments across Canada, whose mission is to provide the means for promoting, assessing and recognizing the effectiveness of the voluntary approach in addressing climate change.

Canada's Climate Change Voluntary Challenge and Registry has also recognized Manitoba Hydro as a Gold Champion Level Reporter for its 2002 Climate Change Action Plan update. This is Manitoba Hydro's fourth consecutive Gold Status award. The year 2002 was the first year for including natural gas operations in the Corporation's target to reduce net GHG emissions in excess of six per cent (relative to 1990 levels) from 1991 to 2012. We have been a VCR Inc. participant since 1994.

To date, the Corporation has reduced its cumulative GHG emissions by more than 215 000 tonnes since 1990 (and relative to 1990 levels). This is equivalent to an average annual reduction of 19 600 tonnes per year or a three per cent reduction in average emissions relative to 1990 levels. In 2002, we exceeded our commitment level for the first time. We accomplished this through fuel switching from coal to natural gas at the Selkirk Generating

### *Manitoba Hydro Environmental Management Policy*

*Manitoba Hydro is committed to protecting the environment. In full recognition of the fact that corporate facilities and activities affect the environment, Manitoba Hydro integrates environmentally responsible practices into its business, thereby:*

- *preventing or minimizing any adverse impacts, including pollution, on the environment, and enhancing positive impacts,*
- *meeting or surpassing regulatory requirements and other commitments,*
- *considering the interests and utilizing the knowledge of our customers, employees, communities, and stakeholders who may be affected by our actions,*
- *reviewing our environmental objectives and targets annually to ensure improvement in our environmental performance,*
- *continually improving our environmental management system,*
- *documenting and reporting our activities and environmental performance.*

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Station, connecting remote diesel-based plants to the provincial grid, and increasing hydro-electricity generation. We also actively export power into jurisdictions dependent on fossil-fuel resources for generation capacity, which helps improve the global GHG picture. The Power Smart Home Comfort and Energy Savings Program has also contributed to reducing greenhouse gas emissions. Across the province, the program has stimulated a reduction in electrical energy demand by 1.3 million kW.h with an estimated reduction in greenhouse gas emissions from home heating systems from natural gas use of 4 300 tonnes of CO<sub>2</sub>.

### **MANITOBA HYDRO RECEIVES ISO 14001 CERTIFICATION**

In February 2003, Manitoba Hydro received corporate certification by British Standards Institute Management Systems as conforming to the international ISO 14001 standard for environmental management systems. To achieve certification, Manitoba Hydro demonstrated that it possessed a vigorous system of management controls for implementing, achieving and maintaining its environmental standards.

Manitoba Hydro began development of its environmental management system in the spring of 1998 following the creation of the Environmental Commitment and Responsibility Program by the Canadian Electricity Association. The program, which was an effort to standardize the electricity industry's



*Manitoba Hydro President & CEO Bob Brennan accepts the Voluntary Challenge & Registry Inc. Leadership award in the electric utilities category from federal Minister of Natural Resources Herb Dhaliwal.*

reporting of environmental performance, required member utilities to develop and register an environmental management system.

### **CHICAGO CLIMATE EXCHANGE**

Manitoba Hydro has become a founding member of the Chicago Climate Exchange (CCX), a group of North American businesses participating in a pilot program to reduce greenhouse gas emissions among participants.

CCX participants have agreed to a commitment to reduce their emissions of greenhouse gases by four per cent below their 1998-2001 average baseline by 2006, the last year of the pilot program. We join a group of North American companies that have formed a voluntary marketplace that is designed to facilitate the reduction and trading of greenhouse gas emissions. Our commitment to net emission reductions that meet or exceed Kyoto protocol targets remains in place. Our participation in CCX will gain us practical experience in emissions trading, which we anticipate will be a feature of future Canadian efforts to meet the country's commitments under the Kyoto protocol. The initiative marks the first time major companies in multiple sectors have made a voluntary binding commitment to make use of market-based mechanisms for reducing their emissions of greenhouse gases.

### **ENVIRONMENTAL PARTNERSHIPS**

The Forest Enhancement Program continues to grow in popularity. Public interest in community tree planting and forest education projects province-wide remains high. The 10-year, \$3.5 million program is a practical approach to address the annual loss of forest cover due to Manitoba Hydro's operations. The program's administration is now computerized and the Corporation's Web site can be accessed for applications and associated criteria/background information. A new illustrated publication created in 2002 provides project proponents and the general public with handy and effective information to assist with successful tree planting. To date the program has supported in excess of 400 projects province-wide.

Non-profit community organizations continue to receive support through the Environmental Partnership Fund. Begun in 1993, the fund assists environmental projects undertaken by not-for-profit organizations. Over 100 projects province-wide have been successfully assisted to date.

*The Spirit of the Earth Awards recognize environmental achievements in improving the environment or in the promotion of environmental awareness by aboriginal people.*

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The Keewatinohk Sipia "Northern Rivers" Partnership Fund continues in its fifth year to help northern residents who share the use of waterways with Manitoba Hydro. The fund supports projects that enhance the safety, comfort and convenience for traditional or commercial activities on regulated northern waterways. Commitments made in 2002-03 included contributions of equipment and associated fishing infrastructure such as docks and boat ramps to the Northwest Co-operative Fisheries (with members in Nelson House, Brochet, South Indian Lake, Pukatawagan, Lynn Lake and Granville Lake). The Cormorant Commercial Fishermen's Association also received funding for the construction of a mobile fish processing plant. The Tataskweyak Cree Nation and Fox Lake First Nation received support to test driftwood to determine if it could be used in pulp and paper production.

### **APPLICATION FOR HYDROGEN**

Manitoba Hydro is proceeding with the installation of an on-site electrolysis system for the production of industrial-grade hydrogen at the Dorsey Converter Station. Presently, the hydrogen is produced from petroleum products and transported in a pressurized tube trailer to Dorsey. Manitoba Hydro is the largest user of industrial grade hydrogen within Manitoba, with the majority being consumed at Dorsey where it is used as a specialized coolant in all nine of the synchronous condensers located at site. Not only does this new project have

positive economic and environmental impacts, but it also will develop significant knowledge and experience within the province on the production of hydrogen for high technology applications.

### **OIL CONTAINMENT AT DORSEY**

A sophisticated oil containment system is under construction at the Dorsey Converter Station. It will feature berms, ditches, and oil traps that ensure any oil in the surface water trying to get off-site will be contained. The oil trap ponds allow the water to flow out through an inverted culvert design, while any oil is skimmed off the surface. The system also reduces the risk of fire spreading to other transformers, equipment, and buildings. Similar systems will be built at the Henday and Radisson converter stations for environmental protection at those sites. All systems will include wells to monitor for the presence of oil. Completion for all systems is scheduled for 2007.

### **SPIRIT OF THE EARTH AWARDS**

Manitoba Hydro announced in November 2000, the creation of an annual awards program that recognizes individuals or groups that have made a positive contribution towards improving the environment in Manitoba. The Spirit of the Earth Awards recognize environmental achievements in improving the environment or in the promotion of environmental awareness by aboriginal people or in projects that directly involve aboriginal



*Manitoba Hydro is committed to protecting the environment. We also partner with non-profit community organizations through such programs as the Environmental Partnership Fund.*

people. Award winners will be presented with their awards on National Aboriginal Day in June 2003.

### ***AGREEMENTS, DISCUSSIONS ADDRESS PROJECT EFFECTS***

Since 1990, Manitoba Hydro has signed a series of agreements with 15 communities to resolve issues arising from the projects constructed in northern Manitoba in the 1960s and 1970s, as well as Winnipeg River developments in the first half of the century. Agreements being finalized in 2002-03 include Mosakahiken Cree Nation, Chemawawin Cree Nation, War Lake First Nation, Fox Lake First Nation and the communities of Easterville, Moose Lake and Cormorant. Concerning hydro-electric developments that occurred on the Laurie River in the 1950s (Manitoba Hydro acquired these plants in the 1970s), negotiations are continuing with the Mathias Colomb Cree Nation, Marcel Columb First Nation and the community of Granville Lake.

Discussions continued between the province, Manitoba Hydro, Cross Lake and Norway House community councils to resolve past adverse effects from the Lake Winnipeg Regulation Project. A draft Agreement-in-Principle has been developed and the parties anticipate reaching a final agreement in the upcoming year. Similar issues for the Nelson House Community Council are being addressed and approval for a draft settlement and trust agreement is pending.

An agreement was concluded with the Rural Municipality of Kelsey and the Local Farmers' Association. The funding agreement provided for the protection of a system of dykes, drains and control structures on a farming area known as the Pasquia Project and for the flood protection of a residential area known as Rall's Island.

Manitoba Hydro has a number of initiatives to address navigational and shoreline access issues related to floating woody debris along



*The Keewatinohk Sipia Partnership Fund supports projects that enhance the safety, comfort and convenience for traditional or commercial activities on regulated northern waterways.*

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waterways that it regulates. With the support of Manitoba Hydro, local communities determine main travel routes and priority sites for debris management activities. To date, work has been performed by members of Chemawawin, Pimicikimak, Nisichawayasihk, Tataskweyak Cree Nations, Fox Lake, Norway House, York Factory First Nations, Southern Indian Lake Commercial Fishermen's Association, and residents of Thicket Portage and Wabowden.

#### **NFA PLAN IMPLEMENTATION AT CROSS LAKE**

The Pimicikamak Cree Nation and Manitoba Hydro are continuing to operate under the terms of the Northern Flood Agreement (NFA), signed in 1977. The four other signatories to the NFA each signed comprehensive implementation agreements, starting with

Tataskweyak Cree Nation in 1992, followed by York Factory First Nation and Nisichawayasihk Cree Nation in 1995, and Norway House Cree Nation in 1997.

On December 16, 2002, a plan was announced between Manitoba, Manitoba Hydro, and Pimicikamak Cree Nation representatives from the Cross Lake First Nation highlighting NFA implementation initiatives to be put in place over the next 15 months. The plan is intended to shift the emphasis from ongoing discussion and process to increased delivery of programs and works that fulfill NFA obligations.

The initiatives build upon a number of existing programs and include an accelerated debris program on the Jenpeg forebay, which the Pimicikamak representatives identified as an area of high priority, a practical plan and agenda for the completion of the long outstanding land exchange, an assessment of existing recreational resources and needs, and the development of playgrounds and outdoor skating rinks on the Cross Lake reserve.

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*On December 16, 2002, a plan was announced between Manitoba, Manitoba Hydro, and Pimicikamak Cree Nation representatives from the Cross Lake First Nation highlighting NFA implementation initiatives to be put in place over the next 15 months.*

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A new initiative that Manitoba and Manitoba Hydro plan to implement in the coming year is a Traditional Pursuits Program, which is designed to encourage members of the Cross Lake First Nation to engage more extensively in their traditional pursuits such as hunting, berry picking and other gatherings. In addition, this program is intended to promote the collection of medicinal plants and the teaching of traditional skills to the youth of the community.

Manitoba Hydro is contributing to ongoing activities such as winter trails, portages and navigational aids, trapping and fishing programs, and the maintenance of an arena built by Manitoba Hydro through a local contractor.

As part of the NFA provision to support trapping, close to 100 trappers in the Cross Lake Resource Management Area received direct support.

A domestic fishing and alternatives foods program jointly funded by Manitoba and Manitoba Hydro continues in the Cross Lake community. The program provides employment for 20 or more local fishers and the annual

delivery of around 113 400 kilograms of fresh fish to residents free of charge. The program has encouraged the development of more than 100 community gardens, provides food for a school lunch program for about 1 500 students and contributes to a number of community events such as the Elder's Feast each year.

Notwithstanding the current plan and programming for NFA implementation, Pimicikamak Cree Nation continues an active publicity campaign to further their interpretation of implementing the NFA. During 2002-03, shareholder resolutions opposing purchases from Manitoba Hydro were advanced to a major U.S. customer. As well, Cross Lake's positions have been advocated at Minnesota regulatory approval hearings on export sales to Manitoba.

To date, we have committed \$480 million for remedial works, compensation and/or mitigation initiatives in northern Manitoba. Of that amount, approximately \$64 million has been spent at Cross Lake.

## The winds of change: Exploring other energy alternatives

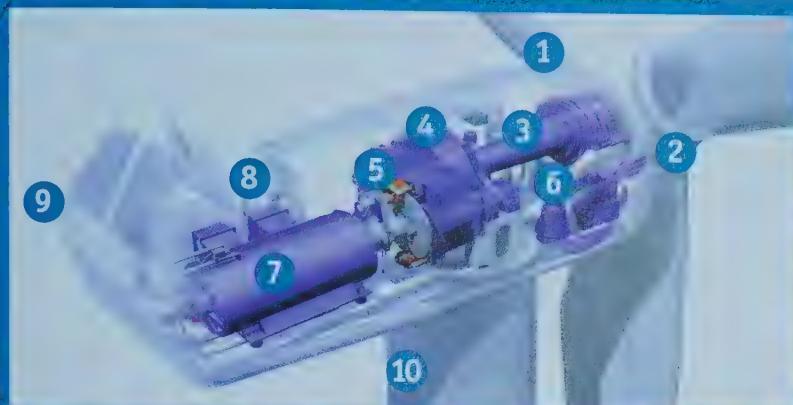


The winds of change are blowing for Manitoba Hydro. Our review of alternative energy resource options has been ongoing for well over 30 years, but as the pricing gap is narrowing, technologies mature and niche applications emerge in Manitoba, alternative energy resources—particularly wind—are being examined more intently as a potential supplement to hydroelectric generation.

With our advantage as the lowest cost electricity provider in North America with 98 per cent of our electricity needs obtained from clean, renewable and reliable hydroelectric generating stations, exploring new sources of renewable energy builds on that advantage. Ultimately price and environmental impacts will define the alternative technologies' penetration into the Manitoba energy market.

In 2002-03, Manitoba Hydro initiated a study to determine the potential of wind power generation in Manitoba. The study will monitor wind speed and direction at seven sites in the province. We are currently committed to producing or purchasing 250 MW of wind power should it be viable from an economical and technical perspective.

In April 2003, Manitoba Hydro and Shell Canada announced a joint venture agreement to explore development, construction, ownership and operation of wind power generation opportunities in Manitoba. We also continued to maintain an open door policy with non-utility generators and independent power producers with their development proposals.

*Anatomy of a Wind Turbine*

- 1 rotor blade
- 2 hub
- 3 drive train
- 4 gearbox
- 5 brake
- 6 yaw drive
- 7 generator
- 8 control system
- 9 nacelle
- 10 tower

Over the years, wind power technology has progressed significantly with increases in the size and capacity of wind turbines. New wind turbines are currently able to generate approximately 10 times as much energy as earlier models. Because of the intermittent nature of wind power, hydroelectric resources will be required to supplement the energy produced through wind power generation. In certain circumstances, wind energy can be stored in hydro reservoirs for use at other times, so that the two resources can work well together.

Sixty-metre towers at the seven sites in southern Manitoba have been erected to monitor the available wind resource. It is necessary to collect specific site data for a minimum of a year prior to conducting a business feasibility study for the development of wind power.

In conjunction with the government of Canada, we are sponsoring engineering assessments of the potential for using small hydro or wind power at several remote locations currently served by diesel generators. The evaluations are being performed on behalf of the local communities.

Another study launched this year, along with the Province of Manitoba and the City of Winnipeg, is examining the feasibility of collecting landfill gases to reduce greenhouse gas emissions from Winnipeg landfills.

The study examines the feasibility of collecting methane gas from city landfills for generating electricity, or as a fuel for boilers to produce heat for greenhouses or industrial purposes. Produced by the anaerobic decomposition of organic wastes, landfill gas can be collected by drilling wells into the landfill and pumping out the gas through a network of pipes.

Other alternative generation technologies being investigated and monitored include bioenergy, distributed generation or microturbines, small hydro, hydrogen, fuel cells, energy storage, and solar photovoltaics. Manitoba Hydro has successfully demonstrated the use of microturbines as an effective odour control method for the City of Winnipeg South End Pollution Control Centre. A permanent installation of a microturbine is scheduled for 2003, possibly leading to other applications using methane produced from sewage sludge at the City of Winnipeg north end treatment facility as a fuel in microturbines to generate electricity and also to control odours from the foul air streams. A demonstration project on solar photovoltaics is underway for the Red River College Downtown Campus. The project involves installing a 12 kW solar PV curtain wall in 2003.

As these technologies continue to mature, Manitoba Hydro will continue to examine, assess and implement to ensure it is meeting its mandate, in part, "to provide for the continuance of a supply of power adequate for the needs of the province and to engage in and to promote economy and efficiency in the generation, distribution, supply and end-use of power."\*

\*excerpt from The Manitoba Hydro Act



*Three Manitoba Hydro employees were among 34 top apprentices honoured at the Manitoba Apprenticeship Trades awards ceremony for highest achievement.*



◆ *The Building the Circle Summer Camp invites young aboriginal women to explore and experience various engineering, technology and trades careers within Manitoba Hydro.*

# Employees and Safety

## OVER FIVE THOUSAND STRONG

With the acquisition of Winnipeg Hydro, Manitoba Hydro welcomed an additional 545 employees into our organization, bringing our employee numbers to 5 365. The strength of any organization is truly its people and the former employees of Winnipeg Hydro bring a legacy of community spirit, skill and commitment to public service to our utility.

Specific education, training and development activities continue to be pursued by employees through course rebate programs, a professional development program and corporate sponsored workshops and seminars. Three Manitoba Hydro employees were among 34 top apprentices honoured at the Manitoba Apprenticeship Trades awards ceremony for highest achievement. The individuals were selected on the basis of practical experience learned on the job, marks attained during technical training at school and recommendations from their apprenticesing employers and school instructors.

Manitoba Hydro received a Certificate of Appreciation from Network South Enterprises, a Winnipeg-based agency, for providing workplace supported employment opportunities for those with mental or physical limitations.



At "rodeos" such as this one for natural gas crews, safety procedures are reinforced in a fun competitive learning environment.

The innovative thinking of employees was demonstrated with the implementation of a new online corporate timecard capture system. The system was expanded from one that tracked electrical apparatus maintenance to one that captures time and attendance for payroll purposes. The system records timecards electronically, eliminating the need for paper forms and reducing the time required to enter data and adjust inconsistencies.

Manitoba Hydro received a "Silver Salamander Award" from the Canadian Amphibian and Reptile Conservation Network for its role in helping to reduce the road mortality of red-sided garter snakes in Narcisse. Our employees volunteered their time to help construct culverts under the main highway through Narcisse to provide safe passage for the snakes on their migration routes.

## **HIGH RISK ACCIDENTS REDUCED IN 2002-03**

At Manitoba Hydro we continued to improve on our safety performance. In 2002-03, there was a significant reduction in high-risk accidents with only five such accidents compared to the 11-recorded incidents in 2001-02. This is the lowest number of high-risk accidents since records were collected beginning in 1999. Our target goal remains at zero.

Our accident severity rate for 2002-03 was 30 days lost per 200 000 hours worked. In the previous year, due to a motor vehicle accident, the rate was 141.54. A target of 17 has been set for this category. Disabling injury/illness frequency increased slightly from 1.03 to 1.4 in 2002-03 per 200 000 hours worked. The target established for this category is .85.



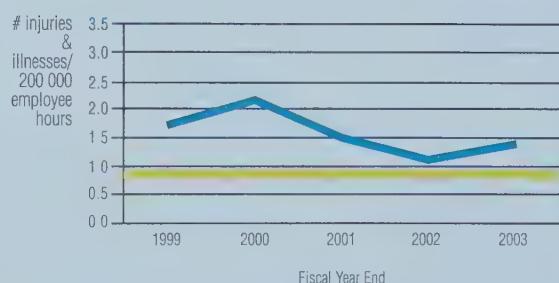
Manitoba Hydro has implemented a peer-to-peer safety observation work method.

We continue to implement a peer-to-peer safety observation work method approach in the workplace. Behaviour-based safety is a program of using observation to emphasize behaviour psychology and the benefits of measuring and recognizing safe behaviour.

In 2002-03, we embarked on an inventory of asbestos to ensure the Corporation continues to protect workers from this occupational hazard. A Hazardous Material Management Handbook was issued outlining the management of hazardous material, the response to spills and releases and the proper handling of hazardous wastes.

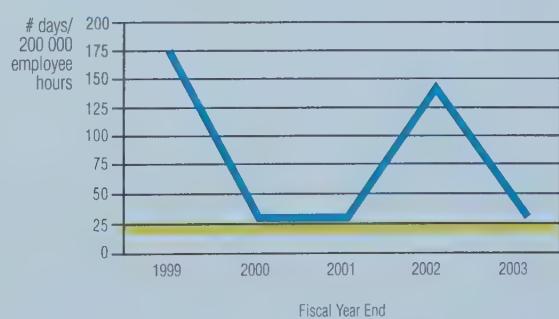
#### Accident Frequency Rate

Target March 2003: < 0.85  
Actual



#### Accident Severity Rate

Target March 2003: < 17 days  
Actual





## Becoming the Employer of Choice for Aboriginal People

◀ Four agreements, including the ones being signed at left with the Aboriginal Council of Winnipeg and the Manitoba Métis Federation, are now in place to help assist us in our aboriginal employment initiatives.



Manitoba Hydro is emerging as a leader in aboriginal employment in Canada. Two partnership agreements in the form of Memorandum of Understandings were signed with the Manitoba Métis Federation and the Aboriginal Council of Winnipeg to assist the Corporation in its Aboriginal employment initiatives. These are in addition to current agreements with the Assembly of Manitoba Chiefs and Northern Aboriginal Community Councils.

The agreements are designed to support, develop and increase Aboriginal recruitment, training, employment and business initiatives within Manitoba Hydro.

The results of such partnerships are being reflected in the Corporation's overall workforce. As of March 2003, approximately nine per cent of the Corporation's workforce was aboriginal, with over 30 per cent of northern employees declaring aboriginal ancestry.

As a result of exceptional results achieved in northern staffing activities in recent years, Manitoba Hydro has increased its aboriginal employment target for northern operations from 25 per cent to 33 per cent by 2005.

To meet this goal, the Corporation continues to apply various programs and initiatives aimed at increasing the number of aborigines employed at Manitoba Hydro.

For example, since 1998 Manitoba Hydro has been working with a number of aboriginal educational organizations in northern Manitoba to encourage development of a curriculum that will prepare aboriginal students for employment within various trade and professional occupations.



*The Grand Rapids Generating Station hosts students from the community as part of a three-month trade practicum of jobs at the plant.*

An aboriginal trades program for southern Manitoba launched in 2002-03 joins the successfully established northern aboriginal trades training programs. Ten students initially enrolled into the southern program that is designed to provide pre-placement academic upgrading and trades training for candidates who do not currently possess the requisite credentials to enter directly into Manitoba Hydro's trades programs. Manitoba Education and Training has formed a partnership with Manitoba Hydro on the Corporation's pre-placement training programs to provide ongoing financial support for the southern-based program.

Discussions to explore ways for aboriginal students to gain the qualifications for the trades programs at Manitoba Hydro and other industries are underway. Those discussions include the Association of Manitoba Chiefs, Keewatin First Nation Education and Training, Manitoba Keewatinowi Okimakanak, Manitoba Education and Training, Keewatin Community College, Frontier School Division and Native Education Directorate and members from aboriginal communities.

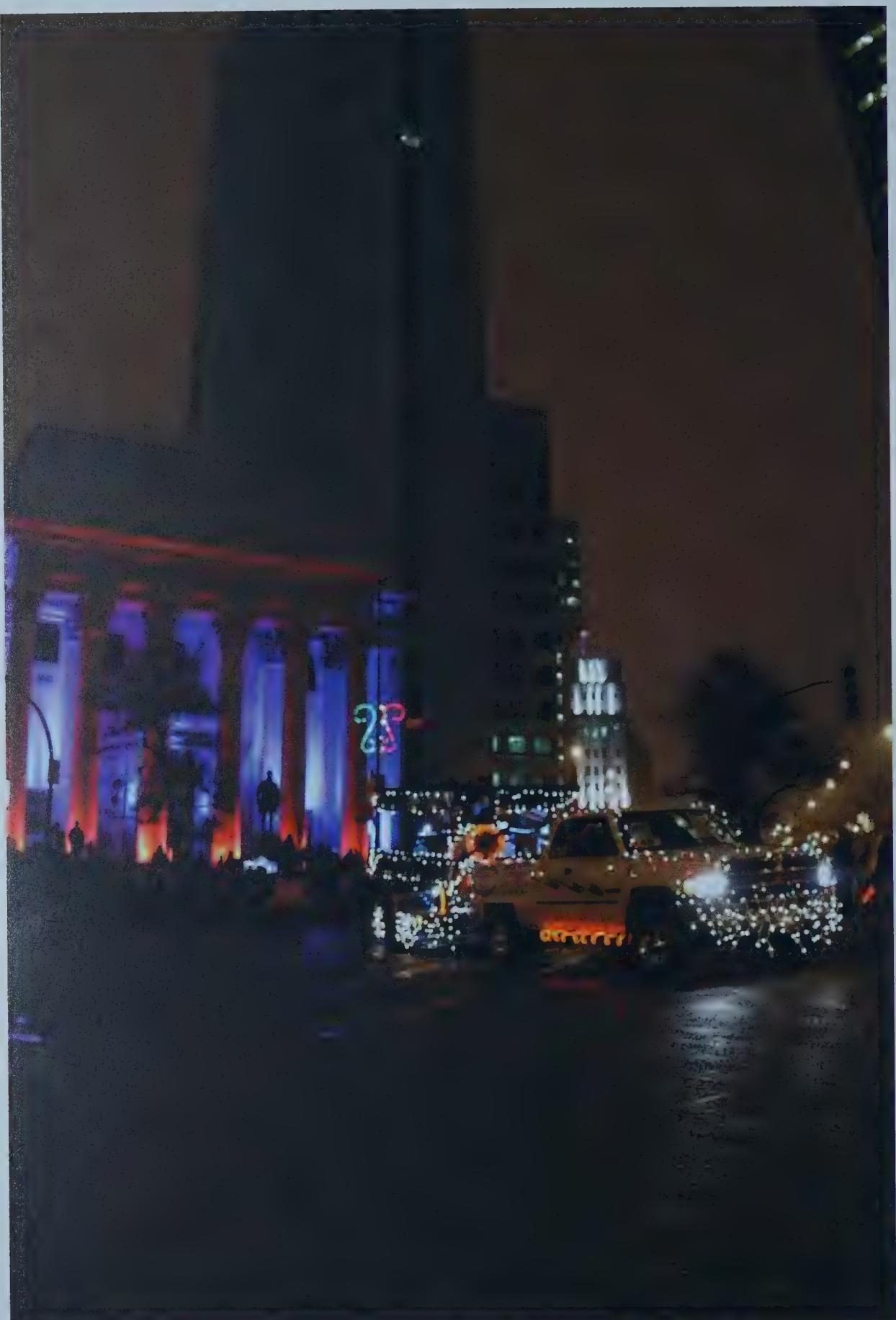
This year, Manitoba Hydro also hosted a summer camp for young aboriginal women to explore and experience various engineering, technology and trades careers within the company. The Building the Circle Summer Camp, developed with the participation of the Assembly of Manitoba Chiefs, had students learn about non-traditional occupations at Manitoba Hydro, meeting aboriginal and non-aboriginal women working in these non-traditional careers and participating in various activities designed to develop team and technical skills. Over the next four years, the students will progress through increasingly complex camp

experiences concluding in the summer of 2005 with the development of individual training and educational plans and the establishments of a mentor group for future support.

To further strengthen our relationships with Aboriginal communities and to help build a corporate-wide workplace culture that respects that relationship, an Aboriginal Relations organizational unit was created in 2002-03. It is the focal point within Manitoba Hydro for all Aboriginal relationship issues. The divisional unit will further develop Manitoba Hydro policies with respect to employment, purchasing and contract work, and business opportunities relative to Aboriginal peoples, organizations and communities.

Manitoba Hydro's Educational Funding Program provided increased monetary amounts of bursaries, scholarships and awards consistent with award amounts available to students from other organizations. Two Aboriginal Youth Achievement awards were renamed after the late Elder Frank Wesley, in recognition of his support of our Aboriginal employment initiatives. Elder Wesley, raised as a traditionalist, was a staunch advocate for aboriginal youth.

Manitoba Hydro has long championed that a critical component of any company's competitive advantage lies with the strength and capabilities of its employees. Tapping into the aboriginal workforce and forging career relationships with aboriginal youth offers excellent opportunities to recruit talented Aboriginal employees at various levels throughout the Corporation.



*Manitoba Hydro was one of the sponsors of the Winnipeg Rotary Clubs inaugural 10 000 Snowmen Contest, to promote Winnipeg as the City of 10 000 Snowmen as well as celebrating the city's charitable spirit.*



◀ At Winnipeg's famous corner of Portage and Main, the Power Smart Festival of Lights Parade begins its journey to the Legislature grounds.

# Community

## *PROMOTION OF SAFETY, ART AND COMMUNITY*

The 2002 Power Smart Festival of Lights Parade lived up to the theme, "Bright Lights, Big City", as more than 60 floats participated in the city's annual kick-off to the holiday season. In addition to being the main sponsor of the event, our volunteers won awards in two categories.

In keeping with its Corporate goal to be a leader in strengthening working relationships with Aboriginal peoples, Manitoba Hydro participated as an Eagle Sponsor in the 2002 North American Indigenous Games held in Winnipeg. More than 7 000 First Nation, Métis, Inuit and Native American athletes, coaches, and officials participated in the 11-day celebration of sport and culture.



*Manitoba Hydro crews prepare Winnipeg for the festive season by installing the ornamental decorative display lights on Portage Avenue.*

Manitoba Hydro was one of the sponsors of the Winnipeg Rotary Clubs inaugural 10 000 Snowmen Contest, to promote Winnipeg as the City of 10 000 Snowmen as well as celebrating the city's charitable spirit. Proceeds from every snowman built went towards fighting polio. Manitoba Hydro employees got into the spirit and secured one of the top prizes. The Grand Rotary Snowman City Award went to Manitoba Hydro's Transcona district office employees for their mammoth three-metre-high snowman.

We once again supported Manitoba Theatre Centre's Regional Tour, bringing its production to 18 communities across the province. Six northern communities also benefited from our support of The Prairie Theatre Centre's production tour. For the seventh consecutive year, Manitoba Hydro supported the Royal Winnipeg Ballet Rural Satellite program, which brings professional teachers and dancers to rural communities so that students can study ballet, tap and jazz.

Since the opening of the Manitoba Electrical Museum and Education Centre in November 2001, nearly 6 500 visitors, some as far away as Australia and Japan, have viewed the vast collection of electrical artifacts collected by retired Manitoba Hydro and electrical industry employees. The education centre of the Museum is also proving to be very popular with school groups learning about electricity and its importance and roots in Manitoba.

## **PUT YOUR FAMILY FIRST**

Manitoba Hydro once again offered a \$10 credit on purchases of carbon monoxide detectors in 2002-03. Over 2 400 Manitobans took advantage of the program, up 24 per cent over last year. Last year's launch of the program resulted in an 83 per cent increase in CO detector sales among participating retailers. The campaign, Put Your Family First, increases Manitobans' awareness of the dangers of carbon monoxide poisoning, and of ways they can keep their homes and families safe. Since the program was launched last year, there have been no public fatalities in Manitoba related to carbon monoxide poisoning.

For the seventh consecutive year, Manitoba Hydro along with Local 2034, International Brotherhood of Electrical Workers, jointly sponsored a billboard safety program. This year's board carried a message promoting extension cord safety. The billboards were located in Netley Creek, Stonewall, Lac du Bonnet, Thompson, Norway House, Portage la Prairie, Virden, Glenboro, Morden, Swan River, Grandview, Ste. Rose du Lac, Neepawa, Melita, and Killarney.



Opened in November 2001, the Manitoba Electrical Museum and Educational Centre has received nearly 6 500 visitors and continues to be popular with visitors of all ages.

The Call Before You Dig program that promotes safe working procedures when excavating, issued a Safe Excavation Guidelines publication and a video in 2002-03. It was distributed to contractors and construction companies around the province. The program is a multi-party utility partnership between Shaw Cable, Enbridge Pipelines Inc., ConocoPhillips, Trans Canada Pipelines, ESSO Imperial Oil Ltd., City of Winnipeg, MTS Communications Inc., AT&T and Manitoba Hydro.

### ***INNOVATION THROUGH R & D***

Science and technology are important to our operations. We address this need by associating ourselves with many available resources within our reach. Assisting our engineers and scientists are links with organizations such as the Canadian Electricity Association, the Canadian Standards Association, the U.S.-based Electric Power Research Institute, the Canadian Gas Association, the American Gas Association, the

Canadian Hydropower Association and the International Hydropower Association.

Manitoba Hydro and Canada's largest information and communications technology (ICT) research consortium, TR Labs, jointly announced an alliance to support the province's ICT growth in February 2003. The alliance of TR Labs and Manitoba Hydro ensures that Manitoba's energy sector is at the forefront of adopting innovative information technology and communications solutions. The partnership brings additional benefits to Manitoba communities in creating business opportunities and technology spin offs.

A joint venture is underway with the University of Manitoba and the Natural Sciences and Engineering Research Council in establishing an Industrial Research Chair in power system simulation. The venture will create a laboratory of research in power systems making Manitoba a centre of knowledge in Canada in this area.

*The Manitoba HVDC Research Centre has over 1 000 customers in 60 countries that continue to benefit from its highly successful Manitoba-made PSCAD power system simulation software and Real Time Playback system.*

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Research continues at the Pinawa Fish Research Facility established by the Corporation. The work focuses on the movement of northern pike in passageways. This groundbreaking research is leading to changes in the guidelines for intake structures and culverts for the movement of fish.

Manitoba Hydro has seen a number of successful enterprises spun off from research activities during 2002-03. NxtPhase, a leader in providing technical innovation in power reliability technology solutions, specializes in digital protection and monitoring solutions. McLeod Harvester Inc. has developed a new harvest system using electric power that has been introduced to five farms during 2002-03. Meridium Power has acquired the marketing rights for specialized motors in Canada.

The Manitoba HVDC Research Centre began its fourth year of operations as a subsidiary of Manitoba Hydro by launching the first year of a comprehensive five-year research program to develop new technologies. The Centre has over 1 000 customers in 60 countries that continue to benefit from its highly successful Manitoba-made PSCAD power system simulation software and Real Time Playback system.

The Centre continues to promote a collaborative research approach through its strong partnership with Manitoba Hydro, the Power Systems Laboratory at the University of Manitoba, and RTDS Technologies, providing digital power system analysis tools worldwide. Joint industrial partnerships also continue with such companies as ABB and Siemens.

Centra Gas Manitoba Inc., a subsidiary of Manitoba Hydro, continues to act as the principal distributor of natural gas in the province.

Manitoba Hydro's newest business initiative, Worldwide Integrated Rating Enhancement (W.I.R.E.) Services, entered its second year of operations. W.I.R.E. Services provides transmission line verification and re-rating services to the electric utility industry.

The business service completed a major project for SaskPower and delivered on three contracts in Alberta along with scheduled work for Manitoba Hydro. Work in Manitoba included rating analysis for over 560 km of transmission line and 348 km of transmission line route for the Wuskwatim Project.

Manitoba Hydro acquired an interest in Teshmont Consultants Inc., a Winnipeg engineering firm that specializes in high voltage direct current technology. The firm which has a long association with Manitoba Hydro also has experience in ac transmission, stations and commissioning.

## MANITOBA HYDRO INTERNATIONAL

Manitoba Hydro International, Inc. (MHI) has provided utility consulting training and management services to more than 70 client organizations in over 40 countries during its 16 years of operations. During 2002-03, MHI took a leadership role by supporting other Manitoba based businesses interested in marketing their services internationally through a newly formed alliance group. The objective of the Energy Services Alliance of Manitoba (ESAM) formed in March 2003 is to increase the number and value of international energy or related contracts, financed by international financial institutions, awarded to Manitoba companies and organizations.

MHI continues to further strengthen relationships with Manitoba and Canadian businesses to jointly pursue international opportunities. MHI is working with Manitoba firms such as Wardrop Engineering, KGS International, EICO Consulting and Teshmont to submit joint venture proposals for small and moderate sized opportunities, and working nationally with organizations such as AMEC, SNC Lavalin and The Acres Group on larger opportunities.

The Line Fault Locator developed and manufactured by Manitoba Hydro and used on our HVDC transmission system has been sold to Siemens AG as a component on their HVDC transmission system sales. Agreements related to the installation and commissioning of this device through Siemens AG has been concluded with India's East South Interconnector II project and China's Guizhou-Guangdong 500 kV dc Transmission project.

Assignments in 2002-03 included the continuation of projects in Central America, India, Jamaica, the Balkans, China and Scotland.

Along with Wardrop Engineering, MHI is providing management services in Nigeria to the National Electric Power Authority in the areas of distribution engineering, billing systems, metering and customer service. The work is in aid of increasing the value of the Nigerian utility's distribution and retail operations in preparation for planned unbundling and privatization.

MHI provided consultancy work to Manitoba Hydro's largest U.S. customer, Xcel Energy Services Inc. The work was two-fold involving a study into switching surge for Xcel's Chisago 115 kV station and providing HVDC expertise, led by the Manitoba HVDC Research Centre Inc. regarding the functional design of Xcel's HVDC interconnection.

Maintenance support for SaskPower's Kinoosao Generating Station continued. Because of the diesel station's accessibility by road from Manitoba compared to access by air for SaskPower, Manitoba Hydro maintenance staff from Thompson have been providing regular and emergency maintenance services for this station.

Technical support and training for regulatory hearing preparations continued for New Brunswick Power. The utility is in the process of obtaining National Energy Board approval of a new 345 kV international transmission line.

MHI agreed to participate in an Energy Efficiency trade show in Moscow in 2003. In conjunction with this project, an engineer from Russia was hosted by Manitoba Hydro to learn about new North American heating systems and energy saving techniques.



### *Financial Review*

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# Management's Discussion and Analysis

## FINANCIAL REVIEW

Manitoba Hydro's consolidated net income for the year ended March 31, 2003, amounted to \$71 million compared to \$214 million in the previous fiscal year. Low water flows had the most significant influence on the reduction in earnings. The decline in hydraulic generation resulting from the reduced water conditions led to a reduction in electricity sales to extraprovincial customers and an increase in the volume of energy purchases required to meet firm supply commitments. While domestic electricity and gas distribution rates did not increase again during the year, domestic energy growth partially offset the impact of reduced export sales.

Net income of \$71 million for the year was almost identical to the forecast amount of \$70 million. After adjusting for the cost of gas sold, revenues were higher than forecast by \$34 million largely due to increased consumption in both the electric and gas sectors as a result of the colder than normal temperatures. Expenses were higher than forecast by \$33 million, the net result of higher power purchases and depreciation expense, partially offset by lower than forecast finance expense.

Consolidated Financial Results	2002-03	2001-02	Change (%)
Gross revenues		millions of dollars	
Electricity sales within Manitoba	<b>891</b>	797	12
Extraprovincial electricity sales	<b>463</b>	588	(21)
Natural gas sales	<b>515</b>	479	8
Total	<b>1 869</b>	1 864	—
Expenses			
Electric	<b>1 277</b>	1 159	10
Gas (including cost of gas sold)	<b>502</b>	472	6
Corporate	<b>19</b>	19	—
Total	<b>1 798</b>	1 650	9
Net Income	<b>71</b>	214	(67)
Electrical Operations		billions of kilowatt-hours	
Generation – interconnected system	<b>29.2</b>	32.6	(10)
Energy sales – Manitoba customers	<b>22.0</b>	20.4	8
Extraprovincial customers	<b>9.7</b>	12.3	(21)
Manitoba peak load	<b>3 916</b>	3 760	4
Gas Operations		thousands of kilowatts	
Gas Sales		millions of cubic metres	
Residential	<b>714</b>	645	11
Commercial and industrial	<b>980</b>	899	9
Transportation	<b>1 694</b>	1 544	10
Total	<b>2 334</b>	2 046	14

Consolidated net income of \$71 million is projected for 2003-04. This projection is based on normal precipitation over the forecast period. While the water supply condition is the most significant factor affecting projected financial results, other variables such as market prices for electricity and natural gas, weather, and interest rates can also influence the Corporation's projected net income.

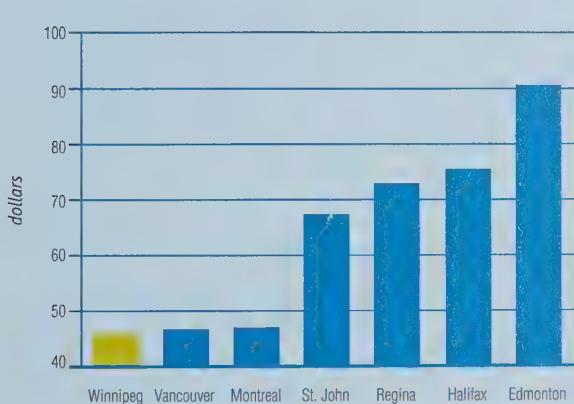
Consolidated net income for the year ended March 31, 2003, includes the results and operations of Winnipeg Hydro that was acquired by the Corporation on September 3, 2002. Winnipeg Hydro formerly serviced approximately 94 000 customers in the central part of the City of Winnipeg. The acquisition allows the Corporation to take advantage of cost savings by combining the operations of the utilities. In addition, Manitoba Hydro will improve customer service through the coordination and streamlining of such programs as Power Smart, the one-call emergency response system and billing, metering and collection processes. Since the date of acquisition, the former Winnipeg Hydro operation has become an integrated operation of Manitoba Hydro.

## ELECTRICAL OPERATIONS

Manitoba Hydro maintains its status of having the lowest domestic electricity rates of any major utility in North America. Manitoba Hydro's electricity customers continue to enjoy a long period of rate stability as there was no electricity rate increase in 2002-03, marking the seventh consecutive year of no rate increases for most customer groups. Electricity rates have not increased to residential and small commercial customers since April 1997 and rates to large industrial customers have remained unchanged since April 1992. There are no general rate changes planned for 2003-04.

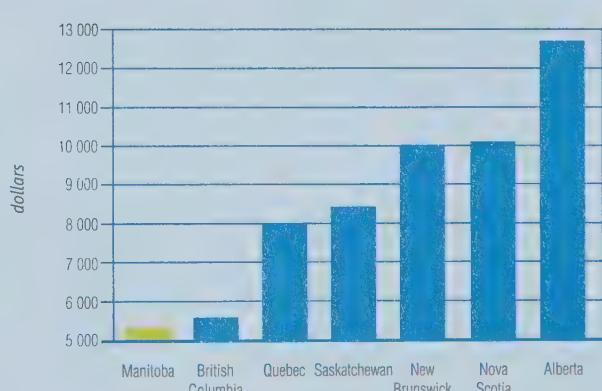
### Residential Electric Bills

750 kWh per month as of May 1, 2003



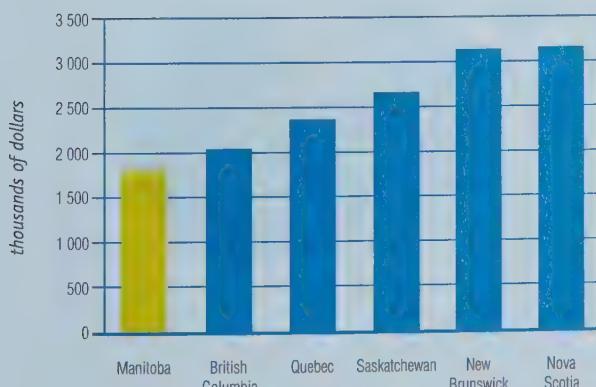
### General Service Medium Bills

300 kW and 120 000 kWh per month  
as of May 1, 2003



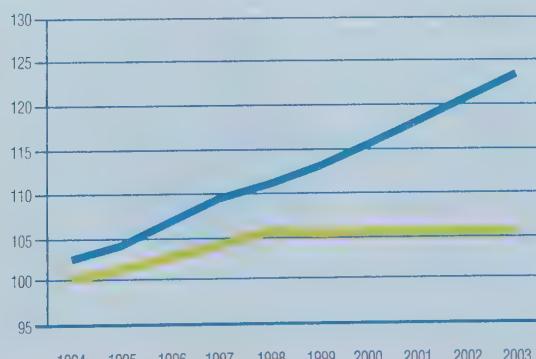
### Industrial Electric Bills

100 MW and 62 GWh as of May 1, 2003



### Annual Residential Rate Increases vs Consumer Price Index (1993=100)

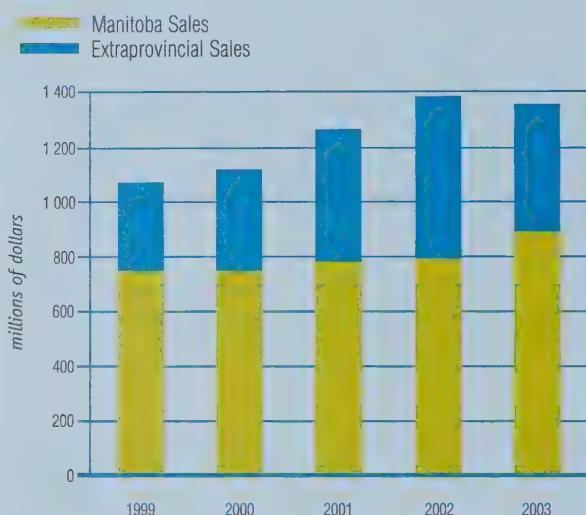
Manitoba Hydro  
Manitoba Consumer Price Index



## REVENUES

Total revenues from electricity operations amounted to \$1 354 million or \$31 million lower than the 2001-02 fiscal year. Electricity sales within the province of \$891 million represented an increase of \$94 million over the prior year, with Winnipeg Hydro accounting for \$46 million of the increase. Conversely, extraprovincial sales of \$463 million represented a \$125 million decline from the prior year due to the reduced hydraulic generation resulting from low water flows.

### Total Revenue Electricity



## MANITOBA ELECTRICITY SALES

Electricity consumption for 2002-03 in Manitoba was 22.0 billion kilowatt-hours. Colder temperatures and higher industrial customer demand drove up electricity sales in the province by 1.6 billion kilowatt-hours or 7%, pushing total sales to \$891 million at March 31, 2003.

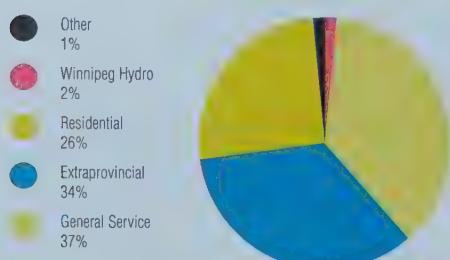
Revenue from Winnipeg Hydro was based on a wholesale rate prior to the acquisition. For the five-month period prior to the September 2002 acquisition date, wholesale billings amounted to \$20 million compared to the full year period for 2001-02 of \$47 million. Post acquisition, Manitoba Hydro began collecting revenue from the former Winnipeg Hydro customers at retail rates equivalent to the rates formerly charged by Winnipeg Hydro and consistent with those rates already being charged to existing Manitoba Hydro customers. The general consumer revenue earned by Manitoba Hydro during the post-acquisition period amounted to \$73 million.

### Power Sales within Manitoba

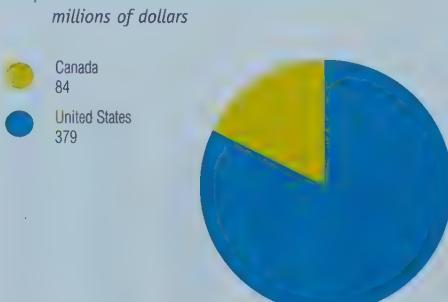
	2002-03	2001-02	Change (%)
<i>millions of dollars</i>			
Residential customers*	354	314	13
General service customers*	501	425	18
Winnipeg Hydro – wholesale	20	47	(57)
Other	16	11	45
<b>Total</b>	<b>891</b>	<b>797</b>	<b>12</b>

\*Current year figures include Winnipeg Hydro sales for the seven-month period from the date of acquisition.

### Source of 2003 Revenue Electrical



### Extraprovincial Power Sales 2003



Revenue from sales to residential customers for 2002-03 increased by \$40 million to \$354 million. The increase in sales was primarily due to increased usage as a result of colder weather experienced this year, especially in the third and fourth quarters, and the additional sales associated with the acquisition of Winnipeg Hydro. The number of residential customers increased by 84 284 during the year, of which 81 609 related to the acquisition of Winnipeg Hydro, and totaled 439 757 at March 31, 2003.

Revenue from general service customers, encompassing the commercial and industrial sector, increased by \$76 million to \$501 million for 2002-03. The increase was mainly attributable to the acquisition of Winnipeg Hydro and to increased demand in the industrial sector. The total number of general service customers increased by 12 156 to 62 218 at March 31, 2003, of which 11 768 is attributable to the acquisition of Winnipeg Hydro.

### EXTRAPROVINCIAL POWER SALES

For the first time in six years, Manitoba Hydro experienced a decline in revenue from extraprovincial sales. Revenues declined to \$463 million, \$125 million lower than revenues reported in 2001-02. The decrease was attributable to the reduction in hydraulic generation and reduced energy available for sale to the export market. Energy sold outside Manitoba was 9.7 billion kilowatt-hours in 2002-03, 2.6 billion kilowatt-hours less than in 2001-02. Of the total extraprovincial revenue, \$379 million or 82% was derived from the U.S. market, while \$84 million or 18% was from sales to other Canadian provinces.

### EXPENSES

Total expenses of the electrical operations amounted to \$1 277 million, an increase of \$118 million or 10% from the previous fiscal year. Higher fuel and power purchases attributable to lower water supply conditions accounted for the majority of the total increase in expenses with the balance mainly attributable to the acquisition of Winnipeg Hydro. The incremental impact of the acquisition on electrical expenses was approximately \$41 million for the seven-month period since acquisition. In addition, there was an increase in depreciation expense due to the implementation of revised depreciation rates, the acquisition of Winnipeg Hydro and capital additions during the year. Decreases in water rental costs associated with reduced hydraulic generation partly offset the increase in expenses.

*Distribution of Expenses Electrical*  
millions of dollars



Expenses (Electrical)	*2002-03	2001-02	Change (%)
<i>millions of dollars</i>			
Operating and administrative	<b>272</b>	248	10
Depreciation and amortization	<b>262</b>	239	10
Water rentals and assessments	<b>103</b>	113	(9)
Fuel and power purchased	<b>151</b>	71	113
Capital and other taxes	<b>48</b>	43	12
Finance	<b>441</b>	445	(1)
Total	<b>1 277</b>	1 159	10

\*Current year figures include Winnipeg Hydro operations for the seven-month period from the date of acquisition.

## OPERATING AND ADMINISTRATIVE EXPENSES

Operating and administrative expenses include the labour, material and overhead costs associated with operating, maintaining and administering the electrical facilities of the Corporation. In 2002-03, operating and administrative expenses amounted to \$272 million, an increase of 10% or \$24 million over 2001-02. The acquisition of Winnipeg Hydro accounted for approximately \$15 million of the increase. The remaining increase is mainly attributable to increased maintenance on the generation, transmission and distribution facilities of the Corporation.

## DEPRECIATION

Depreciation expense totaled \$262 million in 2002-03, an increase of \$23 million or 10% over 2001-02. The increase was mainly attributable to new additions to plant and equipment during the year as well as to the addition of Winnipeg Hydro's generation and distribution assets to Manitoba Hydro's system. In addition, a Depreciation Rate Review Study was completed and implemented in 2002-03 resulting in a net increase of \$4 million in expense.

Depreciation Expense (Electrical)	2002-03	2001-02	Change (%)
<i>millions of dollars</i>			
Generation	<b>82</b>	87	(6)
Transmission	<b>10</b>	10	—
Stations	<b>54</b>	50	8
Distribution	<b>59</b>	48	23
Other	<b>57</b>	44	30
Total	<b>262</b>	239	10

## WATER RENTALS AND ASSESSMENTS

Water rental costs are incurred and paid to the Province of Manitoba for the use of water resources by Manitoba Hydro in the operation of its hydroelectric generating stations. The \$10 million decrease in water rentals reflects lower water flows on Manitoba's major river systems and the resulting decrease in hydraulic generation from 31.0 billion kilowatt-hours in 2001-02 to 28.1 billion kilowatt-hours in 2002-03.

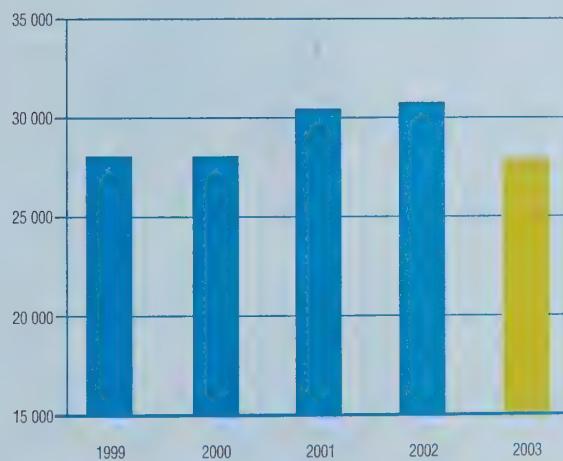
## FUEL AND POWER PURCHASED

Fuel and power purchased amounted to \$151 million in 2002-03, an increase of \$80 million from the previous year. The increase was comprised of increased power purchases of \$69 million and increased thermal generation costs of \$11 million. An increase in the volume of energy purchases required as a result of reduced hydraulic generation and increased domestic demand accounted for \$62 million of the increase in power purchases. Higher market prices created by rising gas prices and increased purchases during peak periods accounted for the remaining \$7 million. In total, power purchases and thermal generation amounted to 3.6 billion kilowatt-hours compared to 2.0 billion kilowatt-hours in the previous year.

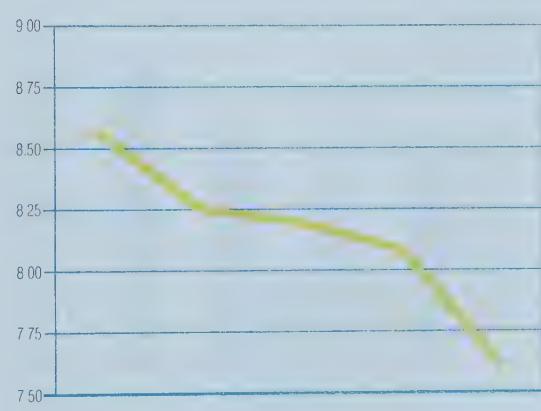
## FINANCE EXPENSE

Finance expense totaled \$441 million in 2002-03, a decrease of \$4 million compared to the previous year. The decrease reflects the net impact of reduced interest rates and gains on the sale of sinking fund investments. Overall, the Corporation's weighted average interest rate declined from 8.06% in 2001-02 to 7.59% in 2002-03. This marks the sixth consecutive year that the average interest rate on embedded debt has declined.

*Hydraulic Generation*  
(GW.h)



*Weighted Average Interest Rate*  
(%)

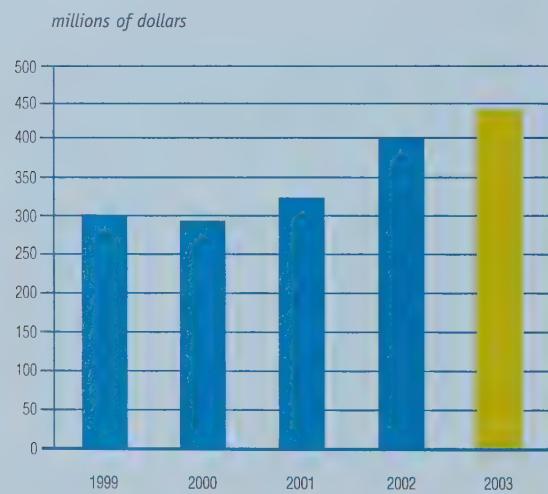


## CAPITAL EXPENDITURES

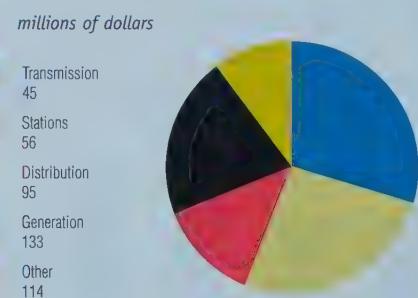
Expenditures for capital construction in the electricity sector totaled \$443 million in 2002-03 compared to \$400 million during the previous fiscal year. Generation capital expenditures of \$133 million included \$35 million for natural gas-fired plants, \$38 million for hydraulic generation system upgrades and \$50 million related to future generation facilities. New transmission line and transmission upgrade projects totaled \$45 million including a \$15 million expenditure on the new 230 kV line being constructed in the western area of the province to the U.S. border to facilitate increased export and import capability. Substation additions and upgrades were \$56 million and distribution system additions and modifications were \$95 million to meet the service requirements of customers throughout the province. The remaining capital expenditures of \$114 million were for replacement of equipment and facilities and for new information technology development projects.

Capital expenditures in 2002-03 of \$443 million were slightly lower than the forecasted amount of \$449 million. Capital expenditures for 2003-04 are expected to continue at this level.

*Net Capital Electrical Expenditures*



*Net Capital Electrical Expenditures in 2003*



## NATURAL GAS OPERATIONS

Centra Gas Manitoba Inc. (Centra Gas) is a wholly owned subsidiary of Manitoba Hydro. Centra Gas distributes natural gas to approximately 251 300 residential, commercial and industrial customers in the Province of Manitoba.

Net income from natural gas operations in 2002-03 amounted to \$13 million compared to \$7 million for 2001-02. The improved financial performance was largely attributable to increased deliveries due to colder weather.

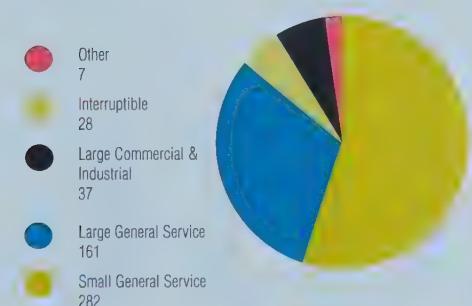
## NATURAL GAS REVENUES

Natural gas revenues from the sale and distribution of natural gas during 2002-03 were \$515 million, with a corresponding \$392 million for the cost of gas sold. Net revenues of \$123 million increased by \$9 million or 8% from fiscal year 2001-02, reflecting the impact of colder weather during the winter heating season. Natural gas deliveries were 2 334 million cubic metres in 2002-03 compared to 2 046 million cubic metres in 2001-02.

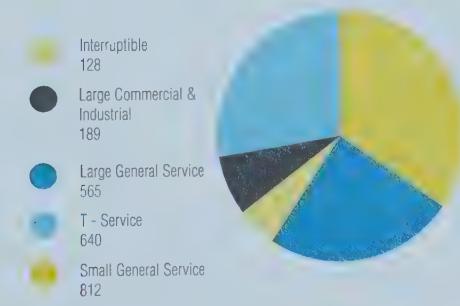
Centra's Supplemental Gas, Transportation and Distribution rates were revised on May 1, 2002, reflecting a decrease of 4.1% for typical residential customers, and on August 1, 2002, reflecting a decrease of 2.1% for typical residential customers. Changes to Centra's Primary Gas rates are in accordance with the quarterly rate setting methodology approved by the Public Utilities Board (PUB). Primary gas rate changes for natural gas supplied to typical residential customers on an annualized basis were implemented May 1, 2002 (13.1% increase), August 1, 2002 (4.0% decrease), November 1, 2002 (2.1% increase), and February 1, 2003 (9.1% increase).

For the first time since 1998, Centra Gas is seeking approval for a rate increase to cover the distribution operating costs of the Company. If approved by the PUB, the rate increase will average 1.4% effective April 1, 2003.

*Gas Revenue*  
millions of dollars



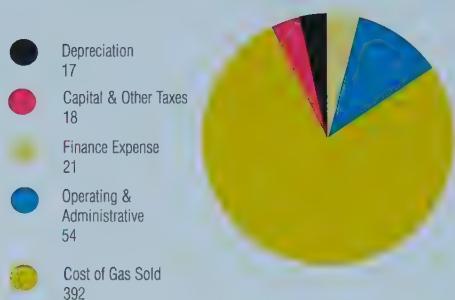
*Gas Deliveries*  
millions of cubic metres



## NATURAL GAS EXPENSES

Expenses related to the natural gas operations, excluding cost of gas sold, were \$110 million in 2002-03, an increase of \$3 million from the prior year. This increase is attributable to operating and customer service costs associated with the natural gas operations.

*Gas Expenses*  
millions of dollars



Under a long-term contract, Centra Gas purchased 952 million cubic metres of natural gas based on monthly Alberta indexed pricing and 340 million cubic metres under daily Alberta indexed pricing to serve its customers. On November 1, 2002, gas supply contracts held by Mirant Canada were assigned to Nexen Marketing, leaving the remaining terms of the contract unchanged. In addition to this long-term contract, the Company delivered natural gas on behalf of brokers that participate in the direct purchase of Western Canadian sourced gas. At March 31, 2003, there were approximately 39 550 (2002 – 53 797) customers receiving natural gas under Direct Purchase arrangements.

### NATURAL GAS CAPITAL EXPENDITURES

Capital expenditures for the year were \$22 million compared to \$18 million for the previous fiscal year. The capital expenditure program reflects the continuing growth in new business, system improvement and other expenditures used to meet the needs of the existing customer base and to bring natural gas services to more Manitobans.

### CORPORATE FINANCING

In 2002-03, proceeds received from new financing arranged by the Corporation amounted to \$734 million primarily through the issuance of Manitoba HydroBonds Series 8 (\$395 million) and Provincial Advances (\$330 million). Proceeds from new financing were primarily used to refinance debt. As well, the Corporation arranged financing totaling \$9 million in connection with mitigation payments.

In addition, the Corporation issued \$167 million of Manitoba Hydro-Electric Board Bonds to the City of Winnipeg in connection with the purchase of Winnipeg Hydro. At fair market value, these bonds bore a premium of \$19 million.

HydroBonds Series 8 offered three investment alternatives: a five-year floating rate bond with an annually adjusted rate set at 3.10% for the first year (\$31 million), a three-year fixed rate bond with interest paid annually at 4.75% (\$102 million) and a five-year fixed rate bond with either annual or compound interest of 5.50% (\$262 million).

In 2002-03, the Corporation retired Provincial Advances of \$843 million, Manitoba HydroBonds of \$115 million, \$11 million of Manitoba Hydro-Electric Board Bonds for Winnipeg Hydro and \$9 million of Manitoba Hydro-Electric Board Bonds related to mitigation.

### SUBSIDIARIES

In addition to Centra Gas, the Corporation has four wholly-owned subsidiaries involved in energy-related business enterprises for purposes of enhancing stakeholder service and value. The four subsidiaries are as follows:

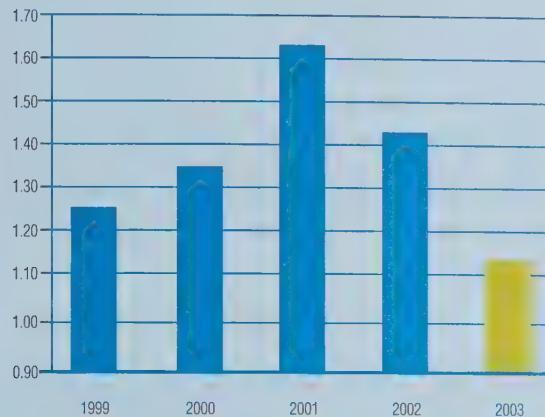
**Centra Hydro Energy Services (CHES)** provides meter reading and other services to Manitoba Hydro and other utilities.

**Manitoba HVDC Research Centre Inc.** provides research and development services and products to the electrical power system industry.

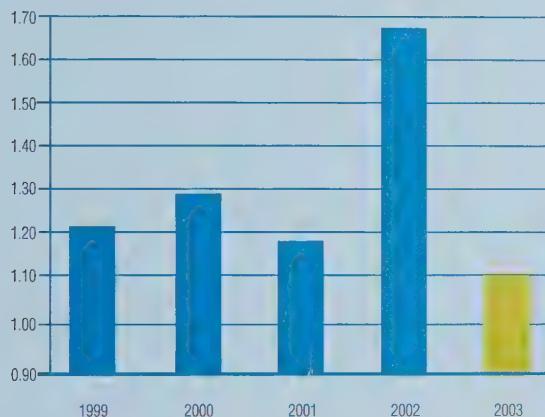
**Manitoba Hydro International Ltd.** provides professional consulting, operations, maintenance and project management services to energy sectors world-wide, either exclusively or through partnerships.

**Meridium Power Inc.** distributes motive power and power protection products, ranging from large horsepower single phase motors to battery-free power protection systems for industrial and telecommunication applications.

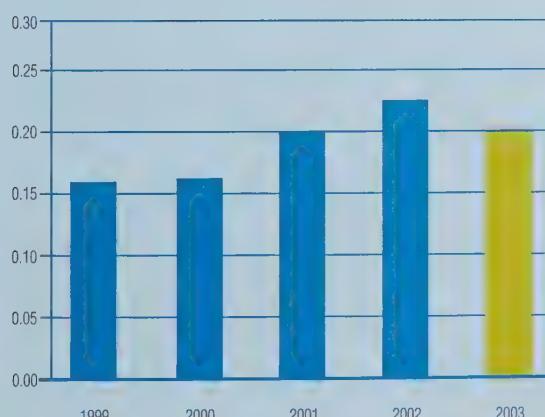
*Interest Coverage Ratio*



*Capital Coverage Ratio*



*Equity Ratio*



## FINANCIAL TARGETS

The Corporation has three primary financial targets to enhance its financial strength, to contribute to rate stability and predictability, and to protect the Corporation and its customers from a variety of other risks. The financial targets are:

### Interest Coverage

**Maintain a gross interest coverage ratio of greater than 1.10.** The interest coverage ratio indicates the extent to which net income is sufficient to pay gross interest on debt. The Corporation's interest coverage ratio declined from 1.42 in 2001-02 to 1.14 in 2002-03 as a result of lower earnings.

### Capital Coverage

**Maintain a capital coverage ratio of greater than 1.00 (excepting major new generation and transmission).** The capital coverage ratio measures the extent to which internally generated funds are sufficient to fund capital expenditures during the year. The Corporation's capital coverage ratio declined from 1.67 in 2001-02 to 1.10 in 2002-03 mainly due to reduced revenues from extraprovincial sales.

### Debt/Equity

**Achieve a minimum debt/equity ratio of 75:25 by 2011-12.** The debt/equity ratio indicates the relative percentage of assets financed through debt versus equity. The Corporation's debt/equity ratio changed from 77:23 at March 31, 2002, to 80:20 at March 31, 2003.

## CORPORATE MEASURES

Manitoba Hydro's Corporate Strategic Plan embodies the Corporation's strategic direction and is built upon Manitoba Hydro's Vision "to be recognized as the best utility in North America with respect to safety, rates, reliability, customer satisfaction and environmental management and to be considerate of all people with whom we have contact." An integral part of measuring the Corporation's progress in achieving the goals set out in the Corporate Strategic Plan is the use of measures or metrics. The measures closely align with the targets that will result in achieving the desired goals. In addition to financial targets, the following measures are utilized:

### Safety in the Work Environment

Safety is the Corporation's most important goal and is incorporated into the daily activities of all employees. Manitoba Hydro is committed to significantly improving its safety performance and is implementing a comprehensive safety management system including behaviour-based safety. To track its performance, the Corporation has adopted three related targets:

Measure	Description	Target	Actual
High-risk accidents	High-risk accidents are a leading indicator for accident severity and include injuries due to electrical contacts, falls from heights greater than 2.5 metres and motor vehicle accidents.	0	5
Accident severity rate	The accident severity rate reflects the seriousness of injuries and measures the calendar days lost. Results are reported per 200 000 hours worked which is the industry standard.	< 17 days per 200 000 hours worked	30 days
Accident frequency rate	The accident frequency rate indicates the effectiveness of safety programs and communication. Results are reported at the industry standard of 200 000 hours.	< 0.85 accidents per 200 000 hours worked	1.4 accidents

## Exceptional Value for Customers

Manitoba Hydro is proud of its record of providing customers with exceptional value as measured in rates, reliability and customer satisfaction. Measures associated with the provision of value include:

<i>Measure</i>	<i>Description</i>	<i>Target</i>	<i>Actual</i>
Retail electric rates	The Edison Electric Institute Survey of Typical Electric Bills and Average Rates, the most comprehensive survey of electricity rates in North America, is used to benchmark domestic electricity rates.	Lowest in North America	Lowest in North America
Retail natural gas rates	The Corporation mitigates natural gas price volatility through its quarterly rate setting methodology and derivatives hedging program.	Amongst the lowest in North America	6th in Canada
Average electric customer outage time	The average customer outage time target is based on a five-year average and is reported as the average annual minutes interruption per customer.	≤ 92 minutes per customer per year	89 minutes
Average electric customer outage frequency	The average customer outage frequency measures the average number of service interruptions per customer over the year.	≤ 1.3 outages per customer per year	1.4 outages
CEA Customer Service Index	The Canadian Electricity Association's (CEA) Public Attitudes Survey provides a benchmark for comparisons of customer service across Canada.	Best in Canada	Best in Canada

## Protecting the Environment

Through careful management of new and existing facilities and infrastructure, Manitoba Hydro will continue to operate in an environmentally responsible manner. Manitoba Hydro is dedicated to sustainable development and protecting the environment. Progress is measured through:

Measure	Description	Target	Actual
Environmental component of CEA Customer Service Index	The environmental component of the CEA Customer Service Index provides comparisons of Manitoba Hydro's environmental performance. The measure is based on customer perception and is measured on a 10 point scale.	>8.5	8.1
Net Greenhouse Gas Emissions	The net Greenhouse Gas Emissions is the cumulative average annual emissions from electric and natural gas operations for 1991 to 2012. Greenhouse gases are reported in carbon dioxide equivalents in megatonnes and include Carbon Dioxide, Methane, Nitrous Oxide and Sulphur Hexafluoride.	6% below 1990 levels (<0.537 megatonnes for electric and natural gas operations)	0.556 megatonnes

## Working Relationships with Aboriginal Peoples

Manitoba Hydro's commitment to increasing Aboriginal representation in its workforce is highlighted in the emphasis on new employment and training opportunities and an expanded scholarship program for Aboriginal peoples.

Measure	Description	Target	Actual
% Aboriginal employment Corporate	Corporate overall Aboriginal employment measures the percentage of employees of Aboriginal ancestry.	10% by 2005	8.9%
% Aboriginal employment Northern	Northern Aboriginal employment measures the percentage of employees of Aboriginal ancestry, north of the 53rd parallel.	33% by 2005	30.4%

## RISK MANAGEMENT

Manitoba Hydro operates in a continually evolving, dynamic and increasingly complex environment that has experienced significant changes including industry restructuring, energy price volatility, convergence and unprecedented merger and acquisition activity. While these changes offer opportunities, they also expose the Corporation to higher levels of risk and uncertainty that may lead to adverse impacts on financial strength, domestic rates and achievement of Corporate goals. To formalize its risk management activities, the Corporation has implemented a comprehensive Risk Management Program that complements existing management practices and integrates risk management from an overall Corporate perspective.

As documented in its Risk Management Program, the areas of highest risk for the Corporation continue to be the financial consequences of drought, continued access to export markets, the potential impacts of industry restructuring, and the exposure of critical infrastructure to acts of vandalism or extreme weather. The Corporation has effective risk management practices in place to address vulnerabilities from these and other risks.

## OUTLOOK

The acquisition of Winnipeg Hydro in September 2002 brings together major energy suppliers in the Province under a single company. Coupled with the purchase of Centra Gas in 1999, Manitoba Hydro has truly become the one-stop energy service provider for Manitobans. The integration of the companies has proceeded very well and the realization of synergies from the amalgamation of operations is on schedule. The savings achieved through synergies together with the continued push to ensure efficiency in operations both serve to contribute to the steady improvement of Manitoba Hydro's financial position. Current forecasts project that Manitoba Hydro's low cost rate structure will be maintained into the foreseeable future with continued real price declines to electricity and natural gas customers.

Steady economic performance and low electricity prices continue to play a fundamental role in the increased load growth of the industrial businesses within Manitoba. Electricity use in this sector is expected to grow at an average of 1.7% annually over the next 10 years. Strong job growth combined with higher disposable income, low mortgage rates, and stable house prices were the primary factors behind the increase of new housing starts in the last several years. Growth in the housing market is expected to slow somewhat in the future, but it will remain a key source of strength within the Manitoba economy. The expansion of products and increased financial assistance offered within the Power Smart\* Program to the commercial and industrial customers across Manitoba will provide more opportunities for significant energy savings for all Manitobans.

The Manitoba Hydro system infrastructure helps to provide Manitobans with electricity at the lowest cost in all of North America. Continued firm export sales supported by the addition of the Brandon Combustion Turbine and the planned construction of the Bipole III high voltage direct current (HVDC) transmission line will help to secure profitability of export sales and also add to the reliability of supply for Manitobans. The above additions to existing facilities also add to the profitability of operations as the proposed HVDC line addition will reduce line losses from the transmission of power from the generating stations on the Nelson River to the load centres in the south. The combustion turbine will allow Manitoba Hydro to capitalize on short-term market opportunities that arise in the export market. Another significant capital project currently underway includes the Interlake to Nelson River Fibre-Optic Line which will become the primary communications link between the Northern generating stations/HVDC converter stations and the Control Centre in the south.

This past year has seen Manitoba Hydro and Northern States Power, a subsidiary of Xcel Energy, reaching agreement on a 10-year power supply contract commencing in 2005. This continued business association with Northern States Power will provide added earnings and cash-flow stability for a large portion of Manitoba Hydro's export sales.

\*Manitoba Hydro is a licensee of the Official Mark and Trademark

Manitoba Hydro's reliance on hydraulically generated electricity, which has the lowest variable cost of all energy sources, and the immense size and geographic diversity (three primary watersheds) of the water reservoirs which feed the generation units help provide a strong competitive advantage over other North American utilities. Given this fact, there is still considerable reliance on annual precipitation being received to replenish the lakes and rivers which make up the mid-north continental watershed.

The advancement in the construction of additional hydraulic generating stations continues to be a sound economic solution to expanding Manitoba Hydro business while adding to the operational profits. Current negotiations with northern First Nation communities seek to ensure that profitable and equitable agreements are achieved to help secure the long-term success of northern communities.

The integration of Manitoba Hydro's electric operations with natural gas operations has enabled the Corporation to achieve greater efficiency, thus improving productivity in both business segments. Centra Gas has submitted a General Rate Application to the Public Utilities Board seeking a 1.4% increase in its Distribution rates to customers for 2003-04. This is the first non-gas rate increase sought by Centra Gas since it was acquired by Manitoba Hydro in 1999. The increase is necessary to ensure that its financial objectives are met and to allow the Company to continue providing its customers with exceptional value in terms of rates, service, reliability and public safety. To continue protecting its customers from sharp Primary Gas rate increases, Centra Gas has been using financial instruments to limit price volatility on behalf of consumers by way of its Derivatives Hedging Program.

The Corporation's recent forecasts based on existing economic conditions and anticipated future developments indicate that financial targets will be reached with customer rate increases below the projected rates of inflation. Manitoba Hydro will continue to offer its customers a secure, economic and effective energy supply along with value-added services at rates that are among the lowest in North America.

# Management Report

*For the year ended March 31*

The accompanying consolidated financial statements are the responsibility of management and have been prepared in accordance with accounting principles generally accepted in Canada, applied on a basis consistent with that of the preceding year. In management's opinion the consolidated financial statements have been properly prepared within reasonable limits of materiality, incorporating management's best judgment regarding all necessary estimates and all other data available up to May 29, 2003. The financial information presented elsewhere in the Annual Report is consistent with that in the consolidated financial statements.

Management maintains internal controls to provide reasonable assurance that the assets of the Corporation are properly safeguarded and that the financial information is reliable, timely and accurate. An internal audit function independently evaluates the effectiveness of these internal controls on an ongoing basis and reports its finding to management and to the Audit Committee of the Board.

The responsibility of the external auditors, Ernst and Young LLP, is to express an independent, professional opinion on whether the consolidated financial statements are fairly presented in accordance with Canadian generally accepted accounting principles. The Auditors' Report outlines the scope of their examination and their opinion.

The Audit Committee of the Board is composed of three members of the Manitoba Hydro-Electric Board. The Audit Committee of the Board meets with the external auditors, representatives of the Auditor Generals Office, the internal auditors and management to satisfy itself that each group has properly discharged its respective responsibility and to review the consolidated financial statements before recommending approval by the Board. The Board has reviewed the Annual Report in advance of its release and has approved its content and authorized its publication.

On behalf of Management:



R.B. Brennan, FCA  
President and Chief Executive Officer



V.A. Warden, CMA  
Vice-President,  
Finance & Administration  
And Chief Financial Officer

## Auditors' Report

*For the year ended March 31*

To the Manitoba Hydro-Electric Board

We have audited the consolidated balance sheet of The Manitoba Hydro-Electric Board as at March 31, 2003 and the consolidated statements of income, retained earnings and cash flows for the year then ended. These consolidated financial statements are the responsibility of the Corporation's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Corporation as at March 31, 2003 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.

The consolidated financial statements as at March 31, 2002 and for the year then ended were audited by other auditors who expressed an opinion without reservation on those statements in their report dated July 3, 2002.

*Ernest & Young LLP*

Chartered Accountants  
Winnipeg, Canada  
May 29, 2003

# Consolidated Statement of Income

For the year ended March 31

	Notes	2003	2002
		(Note 2)	
		<i>millions of dollars</i>	
<b>Revenues</b>			
Electric	Manitoba	891	797
	Extraprovincial	463	588
Gas	Commodity	392	365
	Distribution	123	114
		1 869	1 864
Cost of gas sold		392	365
		1 477	1 499
<b>Expenses</b>			
Operating and administrative		326	298
Depreciation and amortization		281	260
Water rentals and assessments	4	103	113
Fuel and power purchased		151	71
Capital and other taxes		66	61
		927	803
Income before finance expense		550	696
Finance expense	5	479	482
<b>Net Income</b>		71	214

## Consolidated Statement of Retained Earnings

For the year ended March 31

	2003	2002
		<i>millions of dollars</i>
<b>Retained Earnings, Beginning of Year</b>	1 302	1 088
Net income	71	214
	1 373	1 302
Distribution to the Province of Manitoba	18	203
<b>Retained Earnings, End of Year</b>	1 170	1 302

*The accompanying notes are an integral part of the consolidated financial statements.*

# Consolidated Balance Sheet

As at March 31

Notes	2003	2002
	(Note 2)	
<i>millions of dollars</i>		
<b>ASSETS</b>		
<b>Property, Plant and Equipment</b>		
In service	9 991	9 072
Less accumulated depreciation	3 042	2 834
	6 949	6 238
Construction in progress	356	388
6	7 305	6 626
<b>Current Assets</b>		
Bank balances and temporary investments	7	30
Accounts receivable and accrued revenue		393
Interest receivable		9
Materials and supplies, at average cost		69
	501	509
<b>Other Assets</b>		
Sinking fund investments	8	948
Pension assets	9	457
Deferred debt cost	10	571
Goodwill		108
Other deferred assets	11	344
	2 428	3 270
	10 234	10 405



Victor H. Schroeder, QC  
Chairman of the Board



Charles E. Curtis, FCA  
Chairman of the Audit Committee

Notes	2003 (Note 2)	2002
<i>millions of dollars</i>		
<b>LIABILITIES AND RETAINED EARNINGS</b>		
<b>Long-Term Debt</b>		
Long-term debt net of sinking fund investments	5 977	5 608
<u>Sinking fund investments</u>	8	948
	12	6 925
		7 123
<b>Current Liabilities</b>		
Accounts payable and accrued liabilities	258	209
Notes payable	13	128
Accrued interest		111
Current portion of long-term debt	12	343
	1	840
		1 027
<b>Other Liabilities</b>		
Deferred liabilities and credits	14	301
Pension obligation	9	479
Asset purchase obligation	2	255
	1 035	672
<b>Contributions in Aid of Construction</b>		
<b>Retained Earnings</b>		
	1 170	1 302
	10 234	10 405

*The accompanying notes are an integral part of the consolidated financial statements.*

# Consolidated Statement of Cash Flows

For the year ended March 31

	Notes	2003	2002
<i>millions of dollars</i>			
<b>Operating Activities</b>			
Cash receipts from customers		1 863	1 935
Cash paid to suppliers and employees		(983)	(914)
Interest paid		(550)	(556)
Interest received		102	89
		432	554
<b>Financing Activities</b>			
Proceeds from long-term debt		734	1 259
Sinking fund withdrawals		644	—
Retirement of long-term debt		(977)	(1 096)
Discount (premium) on long-term debt		92	(11)
Mitigation liability		(26)	(19)
Distribution to the Province of Manitoba		(200)	—
Notes payable		(54)	(33)
		213	100
<b>Investing Activities</b>			
Property, plant and equipment, net of contributions		(484)	(439)
Sinking fund payment		(134)	(127)
Other		(11)	(72)
		(629)	(638)
<b>Net Increase In Cash</b>		16	16
Cash At Beginning Of Year		14	(2)
<b>Cash At End Of Year</b>	7	30	14

*The accompanying notes are an integral part of the consolidated financial statements.*

# Notes to the Consolidated Financial Statements

For the year ended March 31, 2003

## NOTE 1 SIGNIFICANT ACCOUNTING POLICIES

The consolidated financial statements include the financial statements of the Corporation and its subsidiaries. All significant intercompany accounts and transactions have been eliminated.

### a) PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment are stated at cost which consists of contracted services, direct labour, material and expense, a proportionate share of overhead costs and interest applied at the weighted average cost of capital. Finance expense is allocated to construction until a capital project becomes operational or a decision is made to abandon, cancel or indefinitely defer construction. Once the transfer to in service is made, finance expense allocated to construction ceases and depreciation and finance expense charged to operations commences.

### b) DEPRECIATION

Depreciation is provided on a straight-line remaining life basis. The major components of generating stations are depreciated over the lesser of the remaining life of the major component or the remaining life of the associated generating station.

The range of estimated service lives of each major asset category is as follows:

Generation	– Hydraulic	45 – 100 years
	– Thermal	25 – 45 years
Transmission	– Lines	20 – 53 years
	– Stations	20 – 53 years
Distribution (Electrical and Gas)		20 – 65 years

Provision for removal costs of major property, plant and equipment is charged to depreciation expense on a straight-line basis over the remaining service lives of the related assets. In accordance with utility accounting practices, retirements of these assets are charged to accumulated depreciation with no gains or losses reflected in operations. The estimated service lives and removal costs of the assets are based upon depreciation studies conducted periodically by the Corporation. A provision for estimated future costs of removal and site restoration costs related to the decommissioning of the thermal generating stations is recorded as a deferred liability.

### c) FOREIGN CURRENCY TRANSLATION

Revenues and expenditures resulting from transactions in foreign currencies are translated into Canadian dollar equivalents at exchange rates in effect at the transaction dates except to the extent that revenues are used to hedge future long-term foreign debt obligations. In accordance with the Corporation's Exposure Management Program, revenues used as hedges are firm U.S. export revenues which are translated at the historical book value exchange rates of the respective U.S. debt obligations to which the firm revenues are linked and for which they, together, form an effective hedge. The maturity dates of U.S. debt obligations extend through 2023. For purposes of bridging the

timing of U.S. debt maturities and the U.S. revenue streams used to hedge those debt maturities, the Corporation utilizes U.S. sinking funds. The investment income from the U.S. sinking fund is retained within the Exposure Management Program to form part of the long-term debt obligation hedge.

Long-term monetary assets and liabilities denominated in U.S. currencies are translated into Canadian currency at the exchange rate prevailing at the balance sheet date. The exchange gains or losses, resulting from the translation of these long-term monetary items, which are related to liabilities hedged by future U.S. revenue streams, are deferred to the date in which the sales are made.

Current monetary assets and liabilities denominated in foreign currencies are translated into Canadian currency at the exchange rate prevailing at the balance sheet date. Any exchange gains and losses on the translation of current monetary assets and liabilities are credited or charged to operations in the current period.

Cross currency swap arrangements are also utilized by the Corporation to manage exchange rate exposures and as a means to capitalize on favourable financing terms in either U.S. or Canadian capital markets. Cross currency agreements represent an exchange of principal and/or interest flows denominated in one currency for principal and/or interest flows denominated in another. Such transactions effectively result in the replacement of the original debt obligation with the swapped debt arrangement. Premiums paid upon swap transactions are deferred and amortized on a straight-line basis over the term of the swapped debt. Unamortized discounts and premiums associated with the original debt issue are amortized on a straight-line basis over the term of the swap. The maturity dates of cross currency swaps extend through 2019.

d) **PENSION AND OTHER EMPLOYEE BENEFITS**

An independent actuary using the accrued benefit method and management's best estimate economic and demographic assumptions determine the costs and obligations of pension benefits. Pension expense is comprised of the cost of pension benefits provided during the year plus the amortization of the cost of past service benefits and experience gains and losses. The unamortized present value of past service benefits and actuarially determined experience gains or losses are recognized in the financial statements as a deferred asset or credit. The Corporation utilizes the "corridor method" of amortizing actuarial gains and losses. The amortization of this balance is recognized only to the extent that the cumulative unamortized net actuarial gain or loss exceeds 10% of the greater of the accrued benefit obligation at the beginning of the year and the fair market value of plan assets at the beginning of the year. When required, the excess of the cumulative gain or loss balance is amortized over the expected average remaining service life of the employees covered by the plan.

All pension assets are stated at current market value.

Pension and long-term disability expenses pertaining to the former Winnipeg Hydro employees are recognized at the time contributions are made to the City of Winnipeg Civic Employees Benefit Program. The Program is a defined benefit pension plan with multiple participating employers.

Other employee benefits earned by employees include vacation, vested sick leave and long-term disability. Where applicable, the cost of these benefits is determined based on management's best estimate economic and demographic assumptions.

Vacation expense in respect of employees' services rendered to the date of initial recognition of the liability is recognized in the financial statements as a deferred asset and is being amortized on a straight-line basis over a period of 10 years.

e) **DEBT DISCOUNTS AND PREMIUMS**

Debt discounts and premiums are amortized to finance expense on a straight-line basis over the life of the respective debt.

f) **SINKING FUND INVESTMENTS**

The Corporation records sinking fund investments at par value. The difference between the cost and the par value of each investment is recorded as a premium or discount and is amortized on a straight-line basis over the remaining life of the investment. Any gain or loss on early disposal of investments is credited or charged to operations.

g) **TEMPORARY INVESTMENTS**

Temporary investments are recorded at the lower of cost or market.

h) **PLANNING STUDIES**

Planning studies costs related to uncommitted major generation or transmission facilities are deferred and amortized on a straight-line basis over 15 years. The balance of the unamortized costs of a project which proceeds during the 15-year-period is transferred to the capital cost of the project.

i) **POWER SMART PROGRAMS**

The costs of the Corporation's energy conservation programs, referred to as Power Smart, are deferred and amortized on a straight-line basis over periods of up to 15 years.

j) **SITE RESTORATION COSTS**

Site restoration costs are recorded as a deferred expense and are amortized on a straight-line basis over 15 years.

k) **REVENUES**

Customers' meters are read and billed on a cyclical basis. Revenues are accrued in respect of energy delivered for those cycles not yet billed.

l) **CONTRIBUTIONS IN AID OF CONSTRUCTION**

Contributions are required from customers whenever the costs of extending service exceed specified construction allowances. Contributions are amortized on a straight-line basis over the estimated service lives of the related assets.

m) **COST OF GAS SOLD**

Cost of gas sold is recorded at the same rates charged to customers. The difference between the recorded cost of gas and the actual cost of gas is carried as an account receivable or recorded as a deferred item and recovered or refunded in future rates.

n) **DERIVATIVE FINANCIAL INSTRUMENTS**

The Corporation utilizes derivative financial instruments to mitigate gas price volatility. Amounts paid or received under these financial instruments are recognized as part of the actual cost of gas.

The Corporation mitigates gas price volatility to customers through the use of derivative products restricted to price swaps, call options and collars. These derivative products are applied to 90% of gas volumes that are certain to be required under a "warmest year" scenario for a period up to twelve months. The warmest year scenario is equivalent to approximately 63% of gas volumes in a normal year. A stringent control environment is maintained to manage any risks related to the application of derivatives.

Interest rate swap agreements are utilized by the Corporation to manage the fixed and floating interest rate mix of the total debt portfolio, interest rate exposure, and related overall cost of borrowing. The interest rate swap agreements represent an agreement between the Corporation

and another party to periodically exchange payments of interest without the exchange of the notional principal amount upon which the payments are based. The Corporation may also utilize forward start interest rate swap arrangements where the agreement to exchange interest payments commences at some future date. In either swap arrangement, unamortized premiums and/or discounts attached to the original debt issue continue to be amortized on a straight-line basis over the term of the interest rate swap. The maturity dates of interest rate swap agreements extend through 2032.

**o) ACQUISITION COSTS**

Costs associated with the acquisition of Centra Gas Manitoba Inc. (Centra Gas) and Winnipeg Hydro have been deferred and are being amortized on a straight-line basis over a period of 30 years.

**p) DEFERRED TAXES**

The taxes paid by Centra Gas as a result of its change to non-taxable status on acquisition by Manitoba Hydro have been deferred and are being amortized, on a straight-line basis, over a period of 30 years.

**q) GOODWILL**

Goodwill represents the amount of the Corporation's investments in Centra Gas and Winnipeg Hydro over and above the fair market value of the net assets acquired. The goodwill balance is evaluated annually to determine whether any impairment has occurred. An impairment would be recognized if it was determined that the carrying value of the Corporation's investments in Centra Gas and Winnipeg Hydro exceeded the present value of the future cash flows from these investments. Should impairment occur, it would be recorded as a charge against operations in the year of impairment.

**r) USE OF ESTIMATES**

The preparation of financial statements in accordance with generally accepted accounting principles requires management to make estimates and assumptions that affect amounts reported in the financial statements. Actual amounts could differ from those estimates, but differences are not expected to be material.

**s) REGULATION**

The prices charged for the sale of electricity and natural gas within Manitoba are subject to review and approval by the Public Utilities Board of Manitoba. The consolidated financial statements take into account certain regulatory accounting practices which differ from accounting practices applied in unregulated enterprises, and which relate specifically to select deferred charges and the depreciation of property, plant and equipment that are retired.

**NOTE 2 ASSET PURCHASE OBLIGATION**

Effective September 3, 2002, the Corporation acquired the net assets of Winnipeg Hydro from the City of Winnipeg. The results of Winnipeg Hydro's operations have been included in Manitoba Hydro's electric operations since that date. Winnipeg Hydro was an electric utility with approximately 94 000 customers in the central part of the City of Winnipeg with annual revenues of approximately \$125 million. For the seven-month period since the date of acquisition, retail revenues included in Manitoba Hydro's operations amounted to approximately \$73 million while expenses for the same period amounted to approximately \$41 million. With the termination of the wholesale contract with Winnipeg Hydro, wholesale revenues decreased by \$27 million.

Consideration for the acquisition was the Asset Purchase Obligation that is equivalent to the net present value of payments to the City of Winnipeg of \$25 million per annum in years 2002 to 2006, \$20 million per annum in years 2007 to 2010, and \$16 million per annum in year 2011 and each year thereafter in perpetuity. In addition, \$9 million of direct costs were incurred to complete the transaction.

The Asset Purchase Obligation is derived as follows:

	<i>millions of dollars</i>
Total assets acquired:	
Property, plant and equipment	374
Current and other assets	63
Goodwill	46
	<u>483</u>
Total obligations assumed:	
Long-term debt	(186)
Current and other liabilities	(19)
	<u>(205)</u>
Asset purchase obligation	278
Current year principal reduction	(23)
	<u>255</u>

#### NOTE 3 EXTRAPROVINCIAL REVENUES

	2003	2002
<i>millions of dollars</i>		
United States	379	495
Canada	84	93
	<u>463</u>	<u>588</u>

The effective exchange rate for translation of U.S. revenues used as a hedge of long-term debt is \$1.00 U.S. = \$1.232 Canadian (2002 - \$1.00 U.S. = \$1.232 Canadian). If U.S. revenues designated as a hedge were recorded at average exchange rates prevailing throughout the year, U.S. revenues would have amounted to \$397 million (2002 - \$517 million).

#### NOTE 4 WATER RENTALS AND ASSESSMENTS

	2003	2002
<i>millions of dollars</i>		
Water rentals	95	107
Land rentals and assessments	8	6
	<u>103</u>	<u>113</u>

Water rentals are paid to the Province for the use of water resources in the operation of the Corporation's hydro-electric generating stations. Water rental rates during the year were \$3.34 per MW.h (2002 - \$3.34 per MW.h).

#### NOTE 5 FINANCE EXPENSE

	2003	2002
<i>millions of dollars</i>		
Interest on debt	590	598
Finance expense allocated to construction	(27)	(25)
Investment income	(84)	(91)
	<u>479</u>	<u>482</u>

Included in interest on debt is \$74 million (2002 – \$72 million) related to the Provincial Debt Guarantee Fee. The fee during the year was 0.95% of the total outstanding debt guaranteed by the Province (2002 – 0.95%). Investment income includes interest earned on Canadian and U.S. sinking funds established for the retirement of long-term debt. U.S. sinking fund interest income designated as a hedge of U.S. denominated long-term debt is recorded at the historical book value rate of the associated debt. The effective exchange rate for translation of these revenues is \$1.00 U.S. = \$1.232 Canadian (2002 – \$1.00 U.S. = \$1.232 Canadian).

**NOTE 6 PROPERTY, PLANT AND EQUIPMENT**

	2003			2002		
	In Service	Accumulated Depreciation	Construction in Progress	In Service	Accumulated Depreciation	Construction in Progress
<i>millions of dollars</i>						
Generation						
– Hydraulic	4 110	1 106	182	3 981	1 049	21
– Thermal	452	147	16	261	133	182
Transmission						
– Lines	715	191	10	672	180	22
– Stations	1 841	711	49	1 670	663	62
Distribution	2 053	583	29	1 731	528	56
Other	820	304	70	757	281	45
	<b>9 991</b>	<b>3 042</b>	<b>356</b>	<b>9 072</b>	<b>2 834</b>	<b>388</b>

**NOTE 7 BANK BALANCES AND TEMPORARY INVESTMENTS**

	2003	2002
	<i>millions of dollars</i>	
Bank balances	—	5
Temporary investments	<b>30</b>	<b>9</b>
	<b>30</b>	<b>14</b>

**NOTE 8 SINKING FUND INVESTMENTS**

As provided by The Manitoba Hydro Act, the Corporation pays an annual sinking fund installment to the Minister of Finance of the Province of Manitoba of not less than 1% of the principal amount of the outstanding debt on the preceding March 31, and 4% of the balance in the sinking fund at such date. Payments to the sinking fund during the year were \$134 million (2002 – \$127 million). Income earned on sinking fund investments is included with investment income for the year.

Sinking funds are invested in government bonds and the bonds of highly rated corporations and financial institutions.

	2003	2002
	<i>millions of dollars</i>	
Canadian investments	257	572
U.S. investments	<b>691</b>	<b>943</b>
	<b>948</b>	<b>1 515</b>

Canadian investments have a weighted average term to maturity of 5.4 years (2002 – 5.2 years) and an effective yield to maturity of 6.0% (2002 – 6.5%). U.S. investments have a weighted average term to maturity of 5.7 years (2002 – 3.2 years) and an effective yield to maturity of 4.8% (2002 – 5.9%). U.S. investments are translated into Canadian currency at the exchange rate prevailing at the balance sheet date, \$1.00 U.S. = \$1.47 Canadian (2002 – \$1.00 U.S. = \$ 1.59 Canadian).

#### NOTE 9 PENSION ASSETS AND OBLIGATION

Manitoba Hydro employees are eligible for pensions under the Manitoba Civil Service Superannuation Fund (the Fund). The Fund is a defined benefit plan that requires the Corporation to contribute 50% of the pension disbursements made to retired employees. In addition, the former employees of Centra Gas are entitled to pension benefits earned under the Centra Gas curtailed pension plans up to December 31, 2000, for salaried employees and up to June 21, 2001, for union employees. The former Winnipeg Hydro employees continue to earn benefits under the City of Winnipeg Civic Employees' Benefit Program where, upon its acquisition of Winnipeg Hydro, Manitoba Hydro became a participating employer.

The most recent actuarial valuations for the Corporation's obligation were performed with respect to the liabilities outstanding as at December 31, 2002. These valuations incorporated management's best estimate assumptions and took into consideration the long-term nature of the pension plans. The pension liability pertaining to the Fund amounted to \$479 million at March 31, 2003 (2002 – \$422 million).

The significant actuarial assumptions adopted in measuring the Corporation's pension and other employee benefit obligations are as follows:

	2003	2002
Discount rate	7.0%	7.3%
Expected long-term rate of return on plan assets	7.5%	8.0%
Rate of compensation increase, including inflation, merit and promotions	2.0-3.0%	3.0-4.0%

The Manitoba Civil Service Superannuation Board manages the assets of the Fund on behalf of the Corporation. Pension assets are valued at market rates and are invested as follows:

	2003	2002
<i>millions of dollars</i>		
Bonds and debentures	205	186
Equities	187	216
Mortgages	10	9
Short-term investments	12	22
Real estate	43	40
Fair value of plan assets	457	473
Accrued benefit obligation	479	422
Fund status – plan surplus (deficit)	(22)	51
Net accrued valuation adjustments	115	31
Net expense	9	8
Benefits paid	19	18
Employee contributions	16	15

The return on pension fund assets was negative 3.2% (2002 positive 6.7%). The negative return in 2003 reflects the downturn in equities markets over the past year.

The weighted average term to maturity on fixed income investments is 7.5 years (2002 – 13.9 years).

Information about the curtailed Centra Gas defined benefit pension plans as at March 31, in aggregate, is as follows:

	2003	2002
	<i>millions of dollars</i>	
Fair value of plan assets	<b>43</b>	48
Accrued benefit obligation	<b>65</b>	59
Fund status – plan deficit	<b>22</b>	11
Net accrued valuation adjustments	<b>22</b>	11
Net expense	<b>1</b>	1
Benefits paid	<b>3</b>	3
Employer contributions	<b>1</b>	1

#### NOTE 10 DEFERRED DEBT COSTS

	2003	2002
	<i>millions of dollars</i>	
Deferred foreign exchange	<b>513</b>	809
Debt discount and expense	<b>—</b>	53
Premium on purchase of sinking fund investments	<b>42</b>	20
Other	<b>16</b>	21
	<b>571</b>	903

Deferred foreign exchange represents the net translation gains and losses on U.S. long-term monetary items that will be offset through the translation of future U.S. firm revenue and investment income streams.

#### NOTE 11 OTHER DEFERRED ASSETS

	2003	2002
	<i>millions of dollars</i>	
Power Smart programs	<b>50</b>	43
Planning studies	<b>35</b>	122
Deferred taxes	<b>47</b>	49
Pension valuation	<b>115</b>	31
Contract receivables	<b>28</b>	20
Site restoration costs	<b>19</b>	13
Acquisition costs	<b>20</b>	14
Other	<b>30</b>	25
	<b>344</b>	317

The amortization of deferred assets amounting to \$18 million (2002 – \$22 million) is included in depreciation and amortization expense.

#### NOTE 12 LONG-TERM DEBT

In 2003, the Corporation arranged long-term financing in the principal amount of \$734 million (2002 – \$1 259 million). Of this amount, \$364 million of Manitoba HydroBonds Series 8 were issued with fixed coupon rates in the range of 4.8% to 5.5% and \$31 million with floating coupon rates starting at 3.1%; \$330 million in Provincial advances were arranged with fixed coupon rates in the range of 4.4% to 6.0%; \$9 million of Manitoba Hydro Electric-Board Bonds were issued for mitigation projects with fixed coupon rates in the range of 5.7% to 10.0%.

In addition Manitoba Hydro-Electric Board Bonds in the amount of \$186 million were issued to the City of Winnipeg to defease the existing Winnipeg Hydro long-term debt as part of the acquisition. The fixed rates on these bonds ranged from 5.9% to 11.7%.

	2003	2002
	<i>millions of dollars</i>	
Advances from the Province of Manitoba		
represented by debenture debt of the Province	6 375	7 221
Manitoba HydroBonds	684	404
Manitoba Hydro-Electric Board Bonds	209	36
	<b>7 268</b>	<b>7 661</b>
Less: Current portion of long-term debt	343	538
	<b>6 925</b>	<b>7 123</b>

Included in the current portion of long-term debt is \$304 million (2002 – \$524 million) of debt maturities and \$39 million (2002 – \$14 million) of Manitoba HydroBonds with maturity dates in 2007 and 2008. Manitoba HydroBonds are redeemable at the option of the holder.

Long-term debt, excluding Manitoba Hydro-Electric Board Bonds issued for mitigation projects in the amount of \$36 million (2002 – \$36 million), is guaranteed by the Province of Manitoba.

Debt amounts are summarized by fiscal years of maturity in the following table:

Years of Maturity	2003					2002
	<i>millions of Canadian dollars</i>					
	Canadian Maturities	U.S. Maturities	Total Principal Amount of Maturities	Canadian Yields	U.S. Yields	Total Principal Amount of Maturities
2004	49	294	343	4.9%	4.8%	319
2005	218	—	218	3.9%	—	211
2006	106	—	106	4.5%	—	—
2007	72	—	72	6.1%	—	309
2008	294	—	294	5.5%	—	—
	<b>739</b>	<b>294</b>	<b>1 033</b>	<b>5.2%</b>	<b>4.8%</b>	<b>839</b>
2009-2013	223	725	948	5.6%	6.0%	931
2014-2042	<b>2 440</b>	<b>2 847</b>	<b>5 287</b>	<b>8.2%</b>	<b>7.7%</b>	<b>5 353</b>
	<b>3 402</b>	<b>3 866</b>	<b>7 268</b>	<b>8.0%</b>	<b>7.5%</b>	<b>7 123</b>

U.S. debt is translated into Canadian currency at the exchange rate prevailing at the balance sheet date, \$1.00 U.S. = \$1.47 Canadian (2002 – \$1.00 U.S. = \$1.59 Canadian).

#### NOTE 13 NOTES PAYABLE

Notes payable outstanding at March 31, 2003, have terms ranging from 1 to 63 days and bear interest at the average effective rate of 2.8% (2002 – 2.0%).

The Corporation has a bank credit facility that provides for overdrafts and notes payable up to an amount of \$500 million denominated in Canadian and/or U.S. currency.

**NOTE 14 DEFERRED LIABILITIES AND CREDITS**

	<b>2003</b>	<b>2002</b>
	<i>millions of dollars</i>	
Mitigation liability (note 17)	118	125
Other employee benefits, excluding pensions	75	66
Refundable advances from customers	40	38
Decommissioning of thermal generating stations	16	16
Debt premium and expense	33	—
Interest income and other credits	19	5
	<b>301</b>	<b>250</b>

**NOTE 15 FINANCIAL INSTRUMENTS**

**Derivative Financial Instruments**

The Corporation has entered into collar contracts until January 2004 to purchase 26 230 000 gigajoules of gas at a weighted average price of \$5.26. The weighted average forward price per the Alberta Energy Company at March 31, 2003, is \$6.40.

These contracts will be recorded in the month the gas is delivered. At March 31, 2003, the valuation of these contracts showed a positive fair value of \$16 million. There were no unrecognized financial liabilities relative to these contracts.

**Foreign Exchange Contracts**

As at March 31, 2003, there were foreign exchange contract purchases of \$15 million U.S. at a weighted average exchange rate of \$1.47 and foreign exchange contract sales of \$15 million U.S. at a weighted average exchange rate of \$1.47 (2002 – \$20 million U.S. at a weighted average exchange rate of \$1.56).

**Fair Value**

The estimated fair values of the Corporation's long-term debt and sinking fund investments are based on year-end market interest and exchange rates for similar debt and investment instruments. As at March 31, 2003, the estimated fair value of the Corporation's total long-term debt amounted to \$8 967 million (2002 – \$8 596 million). The estimated fair value of sinking fund investments which the Corporation uses for the purpose of repaying long-term debt amounted to \$1 032 million at March 31, 2003 (2002 – \$1 556 million).

The carrying values of all other financial assets and liabilities approximate fair value.

**Interest Rate Risk**

Interest rate risk is associated with notes payable net of temporary investments, the current portion of long-term debt net of the current portion of sinking fund investments, and floating rate long-term debt which totaled \$1 513 million at March 31, 2003. For information purposes, an increase of 1% in the interest rate would reduce net income by \$15 million for March 31, 2003 (2002 – \$16 million). Manitoba Hydro utilizes interest rate swaps to manage the Corporation's interest rate exposure. These swaps include blended forward interest rate swaps that have been transacted on \$1 billion of debt at blended rates ranging from 6.5% to 7.4%. The lower interest rates produced by these swap transactions reduced finance expense by approximately \$6 million in the 2003 fiscal year (2002 – \$20 million) which reflects the impacts of the cash requirements associated with these obligations.

### Credit Risk

Credit risk on sinking fund investments, pension assets and short-term investments is minimized as the Corporation invests exclusively in government-guaranteed bonds or other highly rated investments. The majority of the Corporation's accounts receivable are owing from domestic consumers who are in diversified industries and from sales to other utilities. Credit risk in the export market is minimized through the application of established credit requirements.

Credit risk associated with counterparties is minimized by establishing minimum credit rating requirements, setting potential exposure limits and monitoring exposure against these limits, and when necessary, obtaining financial assurances from counterparties.

### NOTE 16 COMMITMENTS

Outstanding commitments, principally for construction, are approximately \$185 million (2002 – \$158 million). In addition, with the acquisition of Winnipeg Hydro, the Corporation made a commitment to commence construction of an office building in downtown Winnipeg on or before September 3, 2007.

### NOTE 17 MITIGATION

The Corporation is party to an agreement dated December 16, 1977, with Canada, the Province of Manitoba and the Northern Flood Committee Inc., representing the five First Nations in the communities of Cross Lake, Nelson House, Norway House, Split Lake and York Landing. This agreement, in part, provides for compensation and remedial measures necessary to ameliorate the impacts of the Churchill River Diversion and Lake Winnipeg Regulation projects. Comprehensive settlements have been reached with all communities except Cross Lake.

Expenditures incurred to mitigate the impacts of the Churchill River Diversion and Lake Winnipeg Regulation projects amounted to \$40 million during the year (2002 – \$30 million). To March 31, 2003, \$511 million (2002 – \$471 million) has been spent in mitigating and compensating the project-related impacts.

The Corporation has also entered into agreements with the Province of Manitoba whereby the Corporation has assumed obligations of the Province with respect to northern development projects. The Corporation has assumed obligations, a portion of which remains outstanding, totaling \$144 million (2002 – \$136 million) for which water power rental charges were fixed until March 31, 2001. In recognition of the anticipated payments to be incurred, the Corporation has recorded a total liability of \$118 million (2002 – \$125 million). Reassessments of these liabilities will be made as settlements are achieved. There are other mitigation issues, the outcomes of which are not determinable at this time.

### NOTE 18 DISTRIBUTION TO THE PROVINCE OF MANITOBA

The Government of Manitoba enacted legislation amending The Manitoba Hydro Act to provide for a distribution from the retained earnings of Manitoba Hydro to the Province of Manitoba in each of the fiscal years 2002-03 and 2003-04. The total of payments and provisions in 2002-03 amounted to \$203 million. The amount of the distribution in 2003-04 will not exceed 75% of the Corporation's net income for that year. The total distribution to the Province of Manitoba over the two-year period will not exceed \$288 million.

#### NOTE 19 SEGMENTED INFORMATION

The Corporation operates primarily in two business segments, electricity and gas. Each segment has its own particular economic characteristics and differs in nature, production processes and technology. The electricity segment encompasses the generation, transmission and distribution of electricity. The gas segment represents natural gas supply and distribution activities through the operations of Centra Gas.

The following table contains information related to the operating results, assets and cash flows by segment:

	Electricity		Gas		Corporate		Total	
	2003	2002	2003	2002	2003	2002	2003	2002
Revenue	<b>1 354</b>	1 385	<b>515</b>	479	—	—	<b>1 869</b>	1 864
<b>Expenses</b>								
Operating & administrative	<b>272</b>	248	<b>54</b>	50	—	—	<b>326</b>	298
Depreciation & amortization	<b>262</b>	239	<b>17</b>	18	<b>2</b>	3	<b>281</b>	260
Water rentals & assessments	<b>103</b>	113	—	—	—	—	<b>103</b>	113
Fuel & power purchased	<b>151</b>	71	—	—	—	—	<b>151</b>	71
Capital & other taxes	<b>48</b>	43	<b>18</b>	18	—	—	<b>66</b>	61
Cost of gas sold	—	—	<b>392</b>	365	—	—	<b>392</b>	365
Finance expense	<b>441</b>	445	<b>21</b>	21	<b>17</b>	16	<b>479</b>	482
<b>Total expenses</b>	<b>1 277</b>	1 159	<b>502</b>	472	<b>19</b>	19	<b>1 798</b>	1 650
Net Income	<b>77</b>	226	<b>13</b>	7	<b>(19)</b>	(19)	<b>71</b>	214
Total assets	<b>9 651</b>	9 784	<b>583</b>	621	—	—	<b>10 234</b>	10 405
Operating activities	<b>331</b>	490	<b>101</b>	64	—	—	<b>432</b>	554
Financing activities	<b>293</b>	130	<b>(80)</b>	(30)	—	—	<b>213</b>	100
Investing activities	<b>(608)</b>	(604)	<b>(21)</b>	(34)	—	—	<b>(629)</b>	(638)

*Corporate amounts include the costs associated with the acquisition of Centra Gas.*

#### NOTE 20 COMPARATIVE FIGURES

Where appropriate, comparative figures for 2002 have been reclassified in order to conform to the presentation adopted in 2003.



## CONSOLIDATED FINANCIAL STATISTICS

For the year ended March 31

	*2003	*2002	*2001	*2000	1999	1998	1997	1996	1995	1994
<i>millions of dollars</i>										
<b>Revenues</b>										
<b>Electric:</b>										
Residential	354	314	320	300	300	299	312	301	272	277
General Service	501	425	415	395	400	394	388	378	358	356
Winnipeg Hydro Wholesale	20	47	46	42	48	46	50	56	54	53
Extraprovincial	463	588	480	376	326	297	268	246	253	232
Other Revenue	16	11	8	9	6	5	6	5	5	5
<b>Gas:</b>										
Residential	247	225	240	137	—	—	—	—	—	—
Commercial/Industrial	261	248	259	130	—	—	—	—	—	—
Transportation	4	4	2	1	—	—	—	—	—	—
Other Revenue	3	2	3	1	—	—	—	—	—	—
	<b>1 869</b>	<b>1 864</b>	<b>1 773</b>	<b>1 391</b>	<b>1 080</b>	<b>1 041</b>	<b>1 024</b>	<b>986</b>	<b>942</b>	<b>923</b>
<b>Expenses</b>										
Operating and Administrative	326	298	285	269	223	213	226	224	222	215
Depreciation and Amortization	281	260	249	227	198	191	178	169	160	153
Water Rentals	103	113	56	51	50	56	51	47	45	44
Fuel and Power Purchased	151	71	48	33	59	14	13	14	10	18
Finance Expense	479	482	420	419	411	419	418	426	427	413
Capital and Other Taxes	66	61	61	58	39	37	37	36	22	10
Cost of Gas Sold	392	365	384	182	—	—	—	—	—	—
	<b>1 798</b>	<b>1 650</b>	<b>1 503</b>	<b>1 239</b>	<b>980</b>	<b>930</b>	<b>923</b>	<b>916</b>	<b>886</b>	<b>853</b>
<b>Net Income</b>										
	<b>71</b>	<b>214</b>	<b>270</b>	<b>152</b>	<b>100</b>	<b>111</b>	<b>101</b>	<b>70</b>	<b>56</b>	<b>70</b>
<b>Assets</b>										
Property, Plant and Equipment	9 991	9 072	8 762	8 454	7 815	7 441	7 089	6 866	6 634	6 395
Less Accumulated Depreciation	3 042	2 834	2 609	2 407	2 217	2 054	1 899	1 778	1 638	1 502
Construction in Progress	356	388	275	188	176	221	274	222	173	174
Sinking Fund Investments	948	1 515	1 350	1 282	1 111	988	637	555	527	456
Current and Other Assets	1 981	2 264	2 188	1 175	981	1 021	1 032	872	753	1 020
	<b>10 234</b>	<b>10 405</b>	<b>9 966</b>	<b>8 692</b>	<b>7 866</b>	<b>7 617</b>	<b>7 133</b>	<b>6 737</b>	<b>6 449</b>	<b>6 543</b>
<b>Liabilities and Retained Earnings</b>										
Long-Term Debt	6 925	7 123	6 968	6 611	5 883	5 548	4 246	4 767	5 011	5 158
Current and Other	1 875	1 699	1 629	988	1 050	1 242	2 241	1 486	1 025	1 044
Contributions in Aid of Construction	264	281	281	275	267	261	191	130	129	113
Retained Earnings	1 170	1 302	1 088	818	666	566	455	354	284	228
	<b>10 234</b>	<b>10 405</b>	<b>9 966</b>	<b>8 692</b>	<b>7 866</b>	<b>7 617</b>	<b>7 133</b>	<b>6 737</b>	<b>6 449</b>	<b>6 543</b>
<b>Cash Flows</b>										
Operating activities	432	554	334	374	366	297	273	265	240	232
Financing activities	213	100	170	440	64	262	256	141	(211)	447
Investing activities	629	638	521	856	507	532	455	373	335	367
<b>Financial Indicators</b>										
Interest Coverage <sup>1</sup>	1.14	1.42	1.62	1.35	1.23	1.25	1.23	1.16	1.13	1.16
Debt Ratio <sup>2</sup>	0.80	0.77	0.80	0.83	0.84	0.86	0.88	0.91	0.92	0.93

<sup>1</sup> Interest Coverage represents net income plus interest on debt divided by interest on debt.

<sup>2</sup> Debt Ratio represents debt (long-term debt plus notes payable minus temporary investments) divided by debt plus retained earnings plus contributions in aid of construction.

\* Consolidated statistics include the operation of Centra Gas Manitoba Inc. from July 30, 1999.

## OPERATING STATISTICS

For the year ended March 31

	*2003	*2002	*2001	*2000	1999	1998	1997	1996	1995	1994
<b>Interconnected System Capability</b>										
Capability (000 kW)	5 466	5 230	5 210	5 116	5 137	5 137	5 343	5 343	5 343	5 343
Manitoba Firm Peak Demand (000 kW)	3 916	3 760	3 637	3 524	3 559	3 490	3 409	3 588	3 268	3 514
Percent Change	4.1	3.4	3.2	-1.0	2.0	2.4	-5.0	9.8	-7.0	3.2
<b>System Supply</b>										
Total Energy Supplied (000 000 kWh)					<i>millions of dollars</i>					
Generation	29 167	32 633	32 687	30 146	30 043	34 032	31 842	29 318	28 119	27 448
Scheduled Energy Imports	3 043	1 512	333	464	735	456	625	814	606	755
Isolated Systems	11	10	10	9	17	28	35	33	30	28
<b>Total System Supply</b>	<b>32 221</b>	<b>34 155</b>	<b>33 030</b>	<b>30 619</b>	<b>30 795</b>	<b>34 516</b>	<b>32 502</b>	<b>30 165</b>	<b>28 755</b>	<b>28 231</b>
Manitoba Load (at Generation)										
Energy Supplied for Manitoba (000 000 kWh)										
Interconnected System	21 965	20 412	20 123	19 101	19 398	19 095	19 249	19 024	17 793	18 075
Isolated Systems	11	10	10	9	17	28	35	33	30	28
Total Manitoba Load (at Generation)	21 976	20 422	20 133	19 110	19 415	19 123	19 284	19 057	17 823	18 103
Percent Change	7.6	1.4	5.4	-1.6	1.5	-0.8	1.2	6.9	-1.5	1.9
<b>System Demand</b>										
Energy Sold (000 000 kWh)										
Residential	6 135	5 206	5 282	4 928	4 947	4 937	5 340	5 288	4 800	5 027
General Service	12 143	10 258	9 939	9 448	9 657	9 430	9 159	8 931	8 454	8 493
Winnipeg Hydro Wholesale <sup>1</sup>	629	1 452	1 431	1 401	1 684	1 528	1 569	1 582	1 486	1 480
Direct Customers	46	42	46	43	43	54	56	55	57	65
<b>Total Manitoba Sales</b>	<b>18 953</b>	<b>16 958</b>	<b>16 698</b>	<b>15 820</b>	<b>16 331</b>	<b>15 949</b>	<b>16 124</b>	<b>15 856</b>	<b>14 797</b>	<b>15 065</b>
<b>Total Exaprovincial Sales</b>	<b>9 735</b>	<b>12 298</b>	<b>12 154</b>	<b>10 911</b>	<b>11 404</b>	<b>13 567</b>	<b>11 499</b>	<b>9 659</b>	<b>9 425</b>	<b>9 103</b>
<b>Total Sales</b>	<b>28 688</b>	<b>29 256</b>	<b>28 852</b>	<b>26 731</b>	<b>27 735</b>	<b>29 516</b>	<b>27 623</b>	<b>25 515</b>	<b>24 222</b>	<b>24 168</b>
Gas Deliveries (millions of cubic metres)										
Residential	714	645	699	626	—	—	—	—	—	—
Commercial/Industrial	980	899	974	887	—	—	—	—	—	—
Transportation	640	502	501	530	—	—	—	—	—	—
	2 334	2 046	2 174	2 042	—	—	—	—	—	—
Number of Customers										
Electric:										
Residential	439 757	355 473	353 297	352 618	349 710	345 847	343 197	340 567	338 539	335 811
General Service	62 218	50 062	49 743	49 405	49 153	48 481	48 204	48 067	47 738	47 415
	501 975	405 535	403 040	402 023	398 863	394 328	391 401	388 634	386 277	383 226
Gas:										
Residential	227 071	225 258	224 020	222 110	—	—	—	—	—	—
Commercial/Industrial	24 202	24 093	24 054	23 651	—	—	—	—	—	—
	251 273	249 351	248 074	245 761	—	—	—	—	—	—
Number of Employees										
Regular	4 399	3 862	3 904	3 806	3 277	3 113	3 021	3 124	3 167	3 175
Construction	966	899	797	866	836	868	905	859	774	869
	5 365	4 761	4 701	4 672	4 113	3 981	3 926	3 983	3 941	4 044

\* Gas statistics include the operation of Centra Gas Manitoba Inc. from July 30, 1999.

<sup>1</sup> Manitoba Hydro supplied energy to Winnipeg Hydro on a wholesale basis to the acquisition date of September 3, 2002, and on a retail basis to residential and general service customers, thereafter.

# Manitoba Hydro-Electric Board



Members of the Manitoba Hydro-Electric Board: seated, from left, Rod Beaudry, Vic Schroeder, *Chairman*, Michael Spence, Maria den Oudsten. Standing, from left, Saul Cherniack, Ken Hildahl, Garry Leach, Charles Curtis, Ken Paupanekis, Phil Dorian. Not available for photo, Gerard Jennissen.

**Victor H. Schroeder, qc**  
Associate  
Levene Tadman Barristers and Solicitors

**Rod J. Beaudry**  
Retired Manitoba Hydro employee

**Hon. Saul Cherniack, PC, CM, OM, QC**  
Winnipeg, Manitoba

**Charles E. Curtis, FCA, OM**  
Financial Advisor to the Minister of Finance  
Province of Manitoba

**Phil Dorian**  
Executive Director  
Swampy Cree Tribal Council

**Ken Hildahl**  
Vice President  
Crocus Investment Fund

**Gerard Jennissen**  
Member of the Legislative Assembly for Flin Flon  
Province of Manitoba

**Garry Leach**  
President  
Gerdau AmeriSteel MRM Special Sections Inc.

**Maria den Oudsten**  
Director  
Pandoriba

**Ken Paupanekis**  
Area Superintendent  
Frontier School Division  
Norway House, Manitoba

**Michael Spence**  
Mayor of Churchill and Member of the  
York Factory First Nation

## Manitoba Hydro Senior Officers



Senior officers of Manitoba Hydro: seated, from left, Vince Warden, Bob Brennan, *President and Chief Executive Officer*, Al Snyder. Standing, from left, Ken Tennenhouse, Ken Adams, Gerry Rose.

**Robert B. Brennan, FCA**  
President & Chief Executive Officer

**Ken R. F. Adams, P. ENG**  
Vice-President Power Supply

**Gerry W. Rose, MBA**  
Vice-President Customer Service & Marketing

**Al M. Snyder, P. ENG**  
Vice-President Transmission & Distribution

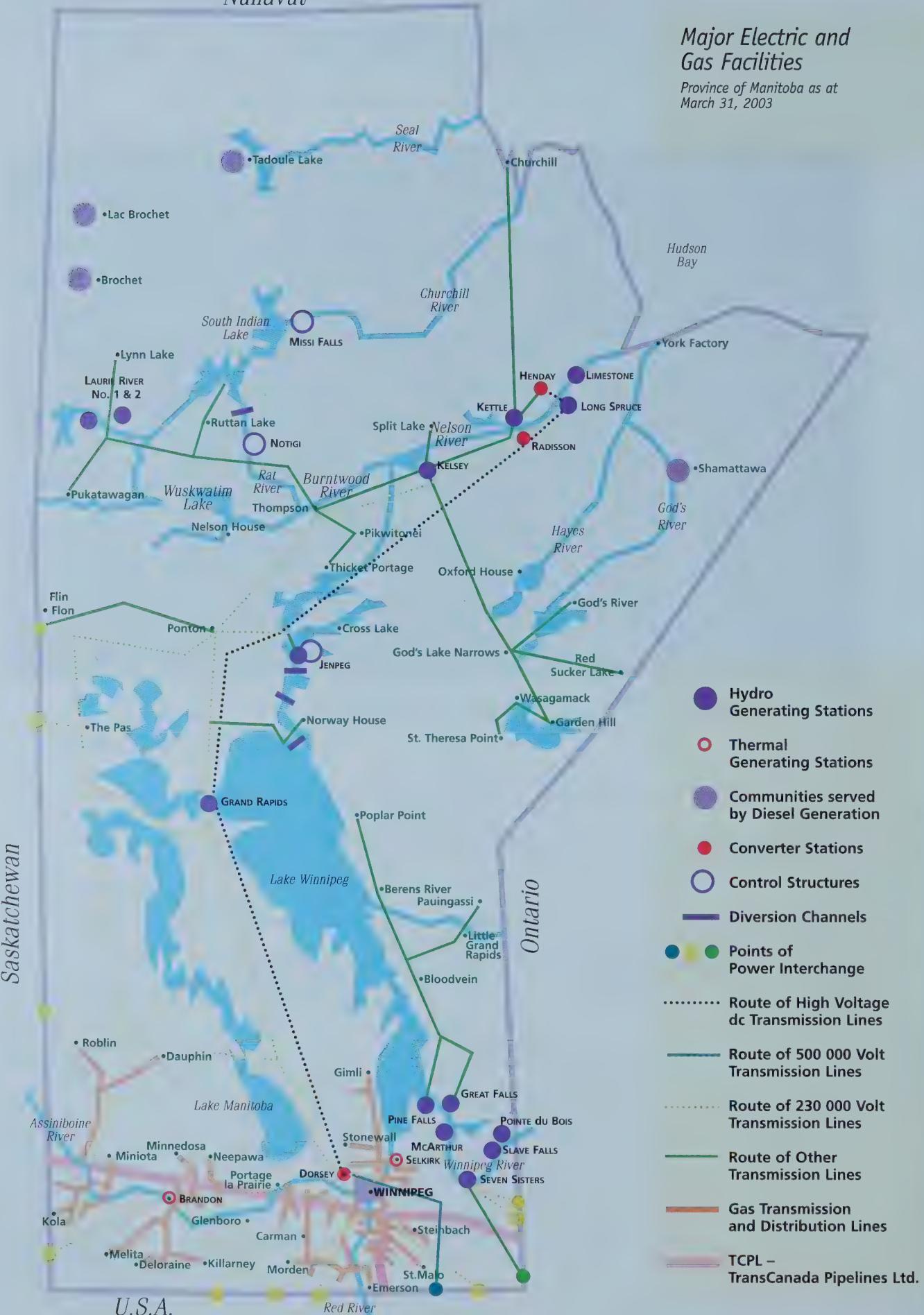
**Ken M. Tennenhouse, LL. B**  
General Counsel & Corporate Secretary

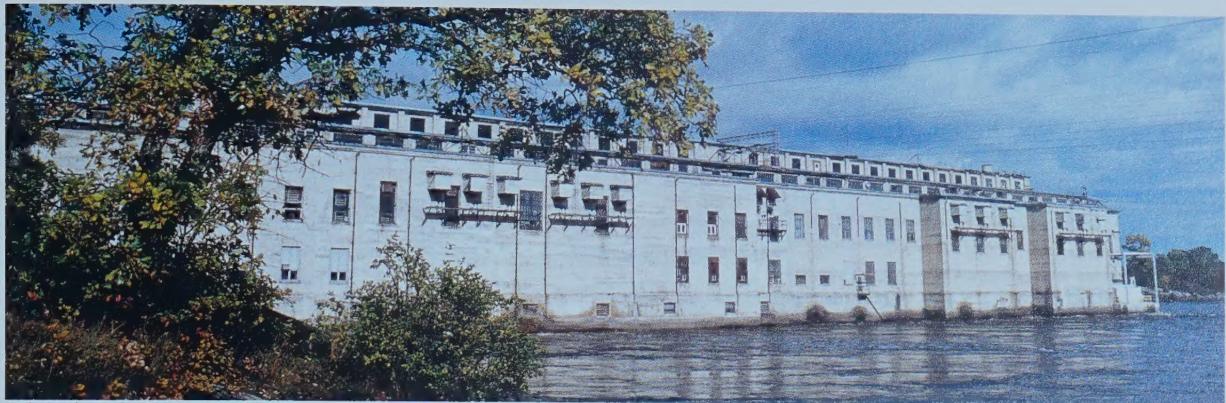
**Vince A. Warden, CMA**  
Vice-President Finance & Administration  
& Chief Financial Officer

## *Nunavut*

## *Major Electric and Gas Facilities*

*Province of Manitoba as at  
March 31, 2003*





Pointe du Bois Generating Station

### Source of Electrical Energy Generated and Imported

For the year ended March 31, 2003

<b>Nelson River</b>	<b>72.67%</b>
<i>Billion kW.h generated</i>	<b>23.4</b>
Limestone	23.37%
Kettle	21.93%
Long Spruce	18.58%
Kelsey	5.74%
Jenpeg	3.04%
<b>Winnipeg River</b>	<b>12.38%</b>
<i>Billion kW.h generated</i>	<b>4.0</b>
Seven Sisters	3.23%
Great Falls	2.81%
Pine Falls	1.95%
Pointe du Bois	1.70%
Slave Falls	1.46%
McArthur	1.22%
<b>Saskatchewan River</b>	<b>3.48%</b>
<i>Billion kW.h generated</i>	<b>1.1</b>
Grand Rapids	3.48%
<b>Laurie River</b>	<b>0.16%</b>
Laurie River #1	0.08%
Laurie River #2	0.08%
<b>Thermal and Imports</b>	<b>11.31%</b>
Thermal	
<i>Billion kW.h generated</i>	<b>0.6</b>
Brandon	1.63%
Selkirk	0.23%
Imports (Scheduled)	
<i>Billion kW.h generated</i>	<b>3.0</b>
Imports	9.45%

### Generating Stations and Capabilities

For the year ended March 31, 2003

#### Interconnected Capabilities

Station	Location	Number of Units	Net Capability (MW)
<i>Hydraulic</i>			
Great Falls	Winnipeg River	6	131
Seven Sisters	Winnipeg River	6	165
Pine Falls	Winnipeg River	6	88
McArthur	Winnipeg River	8	55
Pointe du Bois	Winnipeg River	16	77
Slave Falls	Winnipeg River	8	67
Grand Rapids	Saskatchewan River	4	479
Kelsey	Nelson River	7	225
Kettle	Nelson River	12	1 220
Jenpeg	Nelson River	6	131
Long Spruce	Nelson River	10	1 010
Limestone	Nelson River	10	1 340
Laurie River (2)	Laurie River	3	10
<i>Thermal</i>			
Brandon		3	346
Selkirk		2	121

#### Isolated Capabilities

<i>Diesel</i>	
Brochet	3
Lac Brochet	2
Shamattawa	3
Tadoule Lake	1
<b>Total Generating Capability</b>	<b>5 475</b>

## Glossary

**AECO:** Alberta Energy Company. The company offers market-hub services.

**Demand:** The size of any load, expressed in kilowatts (kW), averaged over a specified period of time.

**Distribution System:** The wood poles, conductors and transformers that deliver electricity to customers. It transforms high voltages to lower, usable levels. Electricity is distributed at 120/240 volt (V) for most residential customers and 120 V to 600 V for the majority of industrial and commercial customers.

**Energy:** The ability to do work. Electrical utilities sell electrical energy to their customers who, in turn, convert this energy into a desirable form—such as work, heat, light or sound. It is measured in kilowatt-hours (kW.h).

**Generator:** A machine that converts mechanical energy—such as a rotating turbine driven by water or steam or wind—into electrical energy.

**Natural Gas:** Natural gas is a fossil fuel, made from hydrocarbons stored millions of years ago when plant and material was buried in the earth's crust. Composed mostly of methane, a colourless and non-toxic substance, natural gas creates virtually no unburned particles or smoke to pollute the atmosphere. The products of combustion are chiefly carbon dioxide and water—the same products exhaled by the human body.

**Peak Load:** Record of maximum amount of electricity used in a given time period.

**Power Grid:** A number of interconnecting electrical power systems which link together electrical utilities covering a large geographical area.

**Transmission System:** The towers and conductors that transport electricity in bulk form from a source of supply to either local areas for distribution, or to power systems of out-of-province electrical utilities. Electricity is usually transported via transmission lines in amounts ranging from 66 kV to 500 kV.

## Accounting terms

### Blended Forward Interest Rate Swap:

An agreement between two parties to exchange predetermined fixed and floating interest rates on a specified notional amount of a principal debt or investment for a specified term. The fixed interest rate is a bond yield calculation based on the fixed interest rate of the existing debt or investment and the fixed interest rate of the forward interest rate swap.

**Exposure Management Program:** U.S. dollar hedging program used by the Corporation to offset U.S. dollar cash flows from debt, investments and net exports to eliminate the impact of fluctuations in the U.S. dollar exchange rate.

**Financial Instrument:** Bonds, provincial advances, short-term promissory notes, temporary and long-term investments, and swap option and foreign exchange contracts.

**Foreign Exchange Contract:** An agreement to exchange a predetermined amount of currency on a specified future date at a specified price.

**Forward Interest Rate Swap:** An agreement between two parties to exchange predetermined fixed and floating interest rates on a specified notional amount of a principal debt or investment for a specified term beginning at a future date.

**Retained Earnings:** Net accumulated earnings that a business has not distributed to shareholders.

**Sinking Fund:** A fund of cash and securities set up to provide for the orderly retirement of a debt.

**Swap:** An agreement between two parties to exchange cash flows at predetermined rates on specified notional amounts at specified future dates.

**Yield:** The average return of a debt or investment using a bond yield convention which recognizes the future interest payments, capital gains or losses, commissions, discounts and premiums.

**Weighted Average Yield Rate:** The average return of debt or investment using the bond yield convention weighted by the remaining term to maturity.

## Units of Measure

**BTU:** British thermal unit. The amount of energy required to raise the temperature of one pound of water one degree Fahrenheit. It works out to about 1 000 joules.

**Gigajoule:** A measure of energy of natural gas—one billion joules. One gigajoule of energy is equivalent to that provided by approximately 278 kilowatt-hours of electricity or 30 litres of gasoline.

**Gigawatt (GW):** The unit of electrical power equivalent to one billion watts or one million kilowatts.

**Joule:** A unit of energy.

**Kilovolt (kV):** The unit of electrical pressure, or force, equivalent to 1 000 volts (V).

**Kilowatt-hour (kW.h):** The unit by which electrical energy is measured. For example, 10 – 100 W light bulbs switched on for one hour would use one kilowatt-hour (1 000 W for one hour).

**Megawatt (MW):** The unit of electrical power equal to one million watts or 1 000 kilowatts (kW).

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**Manitoba Hydro**

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Manitoba Hydro International: [www.mhi.mb.ca](http://www.mhi.mb.ca)  
Meridium Power Inc.: [www.meridiumpower.ca](http://www.meridiumpower.ca)  
Manitoba HVDC Research Centre: [www.hvdc.ca](http://www.hvdc.ca)

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